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ORIGINAL LECTURES.

CLINICAL LECTURE ON EPILEPTIFORM CONVULSIONS FOLLOWING INJURY TO THE SKULL.

Delivered at the University Hospital, September 23, 1882,

BY WILLIAM PEPPER, M.D.,

Professor of Clinical Medicine in the University of Pennsylvania.

Reported by WILLIAM H. MORRISON.

GENTLEMEN,—I bring before you this man, who is himself a physician of long experience, to consider his case for your instruction. I shall not go into the history in detail, but will refer only to the salient points.

He is 50 years of age, of good family stock, free from constitutional taint of all kinds. At the age of fifteen he was kicked above the eye by a horse, and knocked senseless. He remained unconscious for several days. It was supposed that the brain was injured, but, living in an out-of-the-way place, no medical attendance was obtained. The wound of the head was long in healing. It is clear that the external plate of the skull had been fractured, as fragments of bone were discharged through the wound. He, at the time of the injury, had just entered on his second year at college. He was able to return to college for a short time the next year, but found that study gave rise to such distress in the head that he was obliged to give it up; but the following year he succeeded in getting through very respectably. He then began the study of medicine, and got along very well until one week before graduation, when, without any previous suffering or warning, a convulsion occurred at night while he was asleep. Seven years elapsed between the injury and the first convulsion. He returned to his home, opened an office, and began the practice of medicine. He soon had another convulsion, and they then averaged about one a week, always coming on during sleep, leaving him stupid the next day, with aching in the bones, and muscular soreness remaining for a couple of days. There was at this time no pain about the wound, and surgeons whom he consulted advised against an operation, saying that they did

not think the spasms were the result of the injury. He, however, felt that the injury was the cause of the trouble, and finally persuaded a friend to operate. The operation was performed with the ordinary round trephine, the centre of the instrument being placed almost vertically above the pupil of the right eye and three-fourths of an inch from the middle of the eyebrow. A piece of bone was removed, in the centre of which was found a spicule of bone, from one-fourth to one-third of an inch in length, growing from the internal plate. There had not been a depressed fracture. He soon recovered from the operation, and it was six months before another spasm occurred. He then gave up the practice of medicine, and went into business.

From 1857 to 1861 he had occasional attacks, but these gradually became milder and returned at longer intervals. Between 1861 and 1876 he did not have a single attack. It is therefore clear that the operation exerted a powerful beneficial effect. It is also to be noted that he at the same time changed his habits of life, going into business, and in 1861 entering the army as assistant-surgeon. This change of habits may have had something to do in preventing the recurrence of the spasms. In the winter of 1862 and 1863 he had an attack of typhoid fever, from which he feels that he never fully recovered. Since that time there have been occasional attacks of diarrhoea. He again opened an office, and entered into full practice. In 1865 he had several hemorrhages, but under a stimulating plan of treatment they passed off. He, however, continued the use of whiskey, and in one year gained in weight from one hundred and fifteen to one hundred and sixty-five pounds. The use of the stimulus, taking it perhaps more freely than was desirable, brought on dyspepsia, which gradually grew worse. In 1876, directly after a spell of cloudy, rainy weather, another convulsion occurred,—the first for fifteen years. This took place in the afternoon while he was asleep. In a month he had another attack. He then gave up business, and since then has not been regularly employed. He has used the various bromides in enormous doses, and, although he has suffered from bromism, yet the attacks have gradually increased in frequency, although not in violence, from that time. He has had many partial attacks,—i.e., light at-

tacks,—from which he soon rallies, but many have been fully developed. Sometimes a month elapses between the spells, and on one occasion the period was three months. Stimulants were abandoned as much as possible after the attack in 1876. Occasional doses have, however, been taken to relieve the depression of spirits. The bromides have often been combined with hyoscyamus to produce sleep.

For some years he has had aches and pains throughout the body. These are particularly bad in damp, rainy weather, and it has been noticed that in such weather the convulsions are more frequent, and the sleeplessness, the disorder of digestion, the depression of spirits, the restlessness, and the aching of the body more marked.

- The convulsions have been fully-developed epileptic attacks coming on without warning, and, indeed, he frequently feels unusually bright before the seizure. The attacks always come on at night. There is no aura to guide us to the spot from which the irritation might originate. Recently his sufferings have been so great that he has resorted to chloral to secure sleep. This has been the case especially during the past month or two. The chloral has been occasionally combined with morphia.

We have plainly before us in this case these facts: first, it is a case of epilepsy; second, this has not been the result of any inherent or any congenital tendency to the disease, but it has unquestionably been acquired from traumatism.

A traumatic cause may produce epilepsy in two ways. In the first place, it may simply produce such a shock to the general system that it throws the patient into a susceptible condition of nerve, and thus develops a latent tendency which otherwise would not have expressed itself. In such a case there is no direct injury to the nervous system, nor is there any local irritation which excites convulsions by reflex action, but merely the depressing effects of nervous shock. More commonly, however, the way in which a traumatic cause excites epilepsy is such as we see in this case, where it gives rise to one of two things,—either a direct injury to the brain or spinal cord, exciting such irritation as to produce a convulsive explosion, or the injury implicates the nerves, causing such intense peripheral irritation that by reflex action convulsions are excited. In this

patient we have the direct traumatic effect upon the brain.

Many cases are met with in which injury to the skull is followed by convulsions. Sometimes it is difficult to decide whether the injury has been serious enough to cause the spasms which have followed. This is particularly the case with little children. A child may fall, striking its head severely. No fracture can be discovered. Some time after, perhaps while the child is teething, it has a convulsion. It is then difficult to decide whether the spasm has resulted from the local injury or whether the child would have had the spasm if the accident had not happened.

Although in this case a fracture was clearly proved, yet when he consulted two distinguished surgeons they both said that they thought that there had been no injury to the brain, and would not operate. In my experience, where a convulsion occurs in a person who has no hereditary tendency to epilepsy, and who has received an injury to the head, there is very often a connection between the injury and the convulsion; and I always suspect that there is such a connection, instead of doubting its existence. Especially would I have suspected this in a case like the present, where there was so much local injury, with such clear evidence of the bone being involved, and where the injury occurred at the age of fifteen, before which age any tendency to convulsions would have been apt to show itself.

In this patient seven years elapsed before the occurrence of the spasms. What are we to conclude in regard to this fact? It would be natural to suppose that, if the injury produced a depressed fracture of the skull, driving a spicule of bone into the brain and exciting irritation, convulsions would come on soon after the injury. We not rarely find, after such an injury, that spasms appear within a few months.

But suppose, on the other hand, that the injury did not produce a depressed fracture and did not drive a spicule of bone into the brain, but simply set on foot a local meningitis which kept on producing thickening until it gave rise to an exostosis one-third of an inch long, pressing on and irritating the surface of the brain: it is perfectly clear that there is no limit to the time which may be required for the bony growth to reach a sufficient size to cause irritation of the brain. Many years may

elapse between the reception of the injury and the occurrence of convulsions.

An interesting case presented itself to me this spring, also in the person of a physician practising in one of the northern counties of this State. He was a vigorous man of 35, without the slightest tendency to convulsive disease or to nervous trouble of any kind. He was sober in his habits, and free from any venereal taint. Several years ago he was thrown from his buggy, and struck his head against a tree, breaking in the frontal bone, causing a deep depression over the right orbit. There was no wound of the soft parts, and no exfoliation of the bone occurred. If I am not mistaken, some twelve or thirteen years elapsed between the injury and the first convulsion, which was violent in character. From that time the convulsions occurred very frequently. I have no doubt that in this case there had been, in addition, possibly, to a little depression, a slow process of thickening of the bone, adhesion and thickening of the membranes, and gradual pressure on the surface of the brain, until it reached a point at which the irritation was sufficient to excite a convulsive explosion.

I therefore do not think that the length of the interval is to be regarded as showing that there is no connection between the injury and the spasms which follow.

In our patient the disease is not true epilepsy, but it is a case of epileptiform convulsions. We define true epilepsy to be an inherent condition of the nervous system, in which convulsions occur without manifest external cause. Where convulsions result from local causes and resemble those of epilepsy, we speak of them as epileptiform convulsions. Practically speaking, there is a great difference between true epilepsy and epileptiform convulsions. There is a great difference in the prognosis, which is much better in epileptiform convulsions, where we can get at the cause and remove it, than it is in essential epilepsy.

I heartily endorse the operation which was performed in this case. We cannot fail to see that it was followed by decided and continued benefit for nearly twenty years. But at the end of this period, in 1876, the fits reappeared, and from that time they have been gradually increasing in frequency, varying in severity and attended with grave general symptoms, dis-

treasing pain, disturbance of digestion, marked depression of spirits, failure of memory, loss of energy, and such general deterioration of the whole nervous system that the least excitement, worry, or mental effort suffices to bring on an attack.

Let us carefully consider what has been the cause of the return of the convulsions, what are the elements that go to keep up these convulsions, and how we shall modify the treatment in order to afford relief.

The first questions that would naturally occur are, Could not some fresh process of inflammation have taken place, with the formation of another exostosis? And would it not be advisable again to trephine the bone to the outer or inner side of the seat of the former operation? It is not impossible that another exostosis has formed. You note that there has been no pain in the head; but its absence does not prove that no slow inflammatory thickening has occurred. If there had been a fixed pain at the seat of injury during the past six years, I should, without a moment's hesitation, advise trephining; but when we reflect that there has been no such pain, that there has been no renewed injury to excite fresh inflammation, and that the convulsions came on while he was in the habit of taking stimulants in such large quantities that the digestion had become disordered, producing a tendency to diarrhoea, I consider an operation unjustifiable, particularly when we bear in mind that we have nothing to guide us to the spot at which the trephine should be applied.

Let me call attention to the ways of removing such irritation without the use of the trephine. There are other means which are effective. The best of these I consider to be the use of the actual cautery applied over the surface of the cranium. This causes so intense an impression that even at the depth of the membranes of the brain it unquestionably produces a powerful derivative action. I have found in numerous cases of epileptiform convulsions following injury, following sunstroke, following local meningitis, however produced, that the repeated action of the actual cautery was productive of the most remarkable results. I propose to use the actual cautery in this case, making a deep burn with Paquelin's cautery over the right mastoid process.

Again, you will observe that a man who has received such a severe shock to his

nervous system, and who has fallen into the habit of having epileptiform convulsions, is in a state of unstable equilibrium, in which any disorder of general health may, by reflex irritation, suffice to cause the attacks. The point from which this reflex irritation is most commonly exerted is the gastro-intestinal mucous membrane. This is a familiar observation in all cases of epilepsy. There are few epileptics who cannot bring on a spasm by eating indigestible food. Even in essential epilepsy there is no part of the treatment that is of greater importance than the dietetic.

You will remember that our patient, in order to overcome the tendency to hemorrhages and the breaking down of his general health, was advised to use stimulants. He began to use them freely, and, using them too freely, set on foot an irritation of the digestive canal, which still continues. I attach the greatest importance to this disorder of the stomach and bowels as perhaps being the real cause of the reappearance of the spasmodic attacks.

Before speaking of the treatment of the digestive troubles, I shall call your attention to the treatment to which this man has been subjected. As soon as the convulsions returned, the bromides were resorted to, at first in small doses, and, as these failed, larger doses were taken. As one bromide failed, another was substituted. The doses were increased until finally they became heroic. The bromides losing their effect, he becomes weaker, and his whole system is disturbed by the excessive doses of the bromide. Another sedative is substituted. Large doses of hyoscyamus are taken. They lose their effect, and more is added. The digestion becomes disturbed, and occasionally there is diarrhoea. Morphia is tried, at first in small and then in large doses. This loses its effect, and chloral is tried. When he came to the city, three or four days ago, he had been taking in a night from sixty to ninety grains of bromide, thirty to forty grains of chloral, three or four teaspoonfuls of tincture of hyoscyamus, one-half grain or more of morphia, and yet getting very little sleep. Of course he felt wretched and miserable the next day.

If in any case you have reason to suspect that irritation of the mucous membrane of the stomach and bowels gives rise to the convulsions, it is absolutely necessary that the irritation should be removed, no mat-

ter what interference it may cause for the time being with other therapeutic treatment. In this case the bromides and other sedatives have lost their effect, and there is no use in continuing them. My own opinion is that they should be stopped as far as possible, or, if they are not stopped, that only those that can be well borne by the stomach should be given, or else they should be given by the rectum.

I should propose to place our patient on an almost exclusive diet of skim-milk, allowing simple kinds of farinaceous food morning and evening and soft-boiled eggs at dinner. Thus, in the morning before rising, a glass of hot water and milk (equal quantities),—cambric tea; for breakfast take a dish of fine hominy grits with milk; at ten o'clock, another glass of milk and hot water; at twelve o'clock, a little meat or a soft-boiled egg, with bread; at three o'clock, a glass of milk and hot water; at five o'clock, grits, with milk; at half-past seven o'clock, milk and hot water. It is not likely that the milk given in this way will sour on his stomach, particularly if we give remedies to relieve the irritation of the mucous membranes.

This is one of that class of cases in which nitrate of silver has earned its reputation as a cure for epilepsy. In the ordinary cases of epilepsy I do not see what good nitrate of silver can do; but in cases of spasms, where these are excited by irritation of the gastro-intestinal canal, I can easily understand how positive benefit may arise from the use of nitrate of silver. I have found it of great service in such cases. You are probably aware that the people at large regard nitrate of silver as one of the most valuable remedies in epilepsy; and if an epileptic gets hold of a prescription containing nitrate of silver, the probabilities are that he will not stop taking it until he is as blue as an indigo-bag.

After placing this man on the diet that I have indicated, I should give the following:

R Argenti nitratis, gr. $\frac{1}{4}$;
Extracti opii, gr. $\frac{1}{2}$.
Ft. pil. no. i.

Sig.—To be taken four times a day.

Suppose that after the withdrawal of the bromides the convulsions would seem to increase in frequency, it would then be necessary to resort to them again, selecting such a bromide and such a method of administration as would least irritate the stomach.

I should give the bromide of sodium, which I consider to be the least irritant to the stomach of all the bromide combinations, either alone or associated with the bromide of potassium. I should give it in moderate doses only.

When he came to me a few days ago, I cut off all the sedatives that he had been taking, and gave him simply assafoetida and quinine by suppository, and watched his diet carefully, intending to make the change which I have to-day proposed. Since then he has felt better. Yesterday it was exceedingly stormy, and I expected to find him very much depressed, but, on the contrary, he felt better than he had for a long time. Last night he had a marked convulsion, and this morning he has the depression and aching which follow a fully-developed attack. That convulsion has done him no harm. I shall carry out the treatment which I have proposed, continuing the use of the assafoetida and quinine. I should like to continue this line of treatment for a month or six weeks. I have seen it successful in so many cases of a similar character that I am hopeful that a persistence in it will restore this man to health.

ORIGINAL COMMUNICATIONS.

THE TREATMENT OF POST-PARTUM HEMORRHAGE.

Read before the Philadelphia County Medical Society, November 8, 1882.

BY W. H. PARISH, M.D.

HAVING been requested by the directors of this Society to discuss in a paper the treatment of post-partum hemorrhage, it would be inappropriate to attempt a consideration of the general subject, hemorrhage after labor. In fact, the proper limit of a paper to be read before the Society, and to be discussed by it, does not admit of such a consideration *in extenso*. Yet, in order rationally to weigh the various methods of management of this sometimes fatal and always important accident, it will be necessary briefly to recall some of the salient conclusions bearing directly on the indications in treatment.

The term as used in the title of this paper has been generally understood to indicate an unusual loss of blood, during or subsequent to the after-birth period, from

those uterine vessels which have orifices in the placental site. I, however, deem it best to make the term embrace any unusual bleeding from the genitalia occurring soon after the delivery of the foetus.

With such an understanding as to the signification of the term post-partum hemorrhage, we recognize all such bleeding, with rare exceptions, to be either from the placental site or from a laceration of some portion of the genital canal. Hemorrhage coming from the placental site is associated with either a partial or a complete detachment of the placenta. The after-birth may be in the uterus, or it may have been expelled, or a portion may be remaining and adherent and the rest have been extracted. During such hemorrhage the uterus is in an imperfect state both of contraction and of retraction. This condition of the womb may be dependent upon an atony of its muscular fibres that is independent of influence exerted upon the uterus by its contents; an atony that prevents its sufficient contraction and retraction even if entirely empty; an atony dependent upon a variety of causes which the scope of this paper does not permit me to investigate. It is essential, however, to bear in mind that such an atony does at times exist.

Again, the presence of any substance in the uterus after the birth of the child may act mechanically, and in some other not well-understood manner, in preventing condensation of the womb sufficient to close the calibres of those vessels which are torn off in a partial or a complete separation of the placenta. In this way blood-clots, especially if somewhat firm, intra-uterine tumors, the placenta or any portion of it or of membranes, may bring about bleeding. In the case of tumor, and especially of a partially-attached placenta, not only is an influence exerted similar in nature to that exerted by other intra-uterine substances, but these structures further act as splints over the surfaces of their attachment to prevent contraction of muscular fibres in that special portion of the womb, and a localized inaction or paralysis is produced. Moreover, while attached they determine a flow of blood into the vessels of that special uterine area.

But an atony not dependent upon the existence of some substance in the uterus is itself productive of retention of placenta, clots, membrane, etc. It is also apt to be

associated with adhesion of the placenta; for the cause of this adhesion may have been operative also as a cause of uterine inertia. The presence of a tumor is also liable to have engendered atrophy of some portion of the uterine walls. Thus, then, do we often find an atony that in its origin antedates labor associated after the delivery of the foetus with some intra-uterine condition itself hemorrhage-producing.

I desire to emphasize the fact that hemorrhage from the placental site has as its one invariable cause insufficient uterine contraction and retraction. This insufficient contraction and insufficient retraction are dependent upon uterine inertia, whether this inertia is independent of or dependent upon some intra-uterine condition, and whether the uterus is empty or contains such substances as placenta, membranes, clots, tumors, etc. Hemorrhage from the placental site is due to insufficient shortening of uterine muscular fibres, to insufficient uterine condensation, to insufficient compression through this condensation of the uterine vessels leading to the placental site. Hemorrhage from the placental site means an insufficiently contracted and an insufficiently retracted uterus.

Bring about sufficient uterine condensation, and we secure that physiological compression of the bleeding vessels by which nature when undisturbed limits the loss of blood to physiological requirements. Place, then, the uterus in a condition favorable to condensation, and secure promptly this condensation. Empty the uterus of its contents, and make it contract and retract. Such are the two indications, and under all ordinary circumstances these two measures must be instituted quite simultaneously. To empty the uterus without assuring its condensation might prove fatal; to attempt to obtain condensation, and at the same time to leave within the uterus portions of after-birth, membranes, clots, etc., would prove futile, and possibly fatal.

The immediate removal of an intra-uterine tumor, productive of post-partum hemorrhage, must depend upon the extent to which the tumor is attached to the uterine wall. If not too intimately connected, its immediate removal with wire écraseur, or with scissors, after ligation of its pedicle, is indicated. If it cannot be promptly and with comparative safety removed, condensation of the uterine walls about it must be attempted.

The influence of thrombi in controlling bleeding from the placental area is too unreliable to merit our confidence. In lowered conditions of the system, as in exhaustion from hemorrhage, or in shock, they may act temporarily in checking the bleeding; but when the force of the circulation is somewhat regained, the thrombi are apt to be washed out and bleeding to recur, unless a firm retracted state of the womb has been in the mean time secured. Moreover, such thrombi are fruitful sources of septic infection; for they are very prone to undergo septic decomposition. In the relaxed state of the womb which accompanies their existence, atmospheric air is accessible to them, and they are also in contact with lochia, likely itself to become septic in character. Thrombi thus circumstanced are in one sense only slightly and most uncertainly conservative, and in another sense most certainly and greatly dangerous. The very existence of thrombi in the exposed vessels at the placental area seems to me pathological, and assiduously to be avoided. It is only as a *dernier resort* that we should ever employ those remedial measures which control hemorrhage by producing coagula in the vessels of the placental area. In order to prevent hemorrhage from these vessels, nature, when acting with normal efficiency, does not plug them with fibrinous masses, but she obliterates their calibre by the compressing action of uterine retraction. She does not keep the walls of these vessels apart by blood-clots, fragments of which may escape into the circulation and become emboli, probably septic emboli, in more or less remote parts of the economy, or which, after conversion into sepsin, and being beyond the reach of detergent, and antiseptic syringing, are certain to infect dangerously the entire system. *It is through uterine condensation, then, and not through the production of thrombi, that we must control hemorrhage from the placental area.*

Hemorrhage from a laceration of the cervix, vagina, perineum, or vulva is, of course, not dependent upon uterine inertia. The state of the uterus bears no relation to the occurrence or continuance of bleeding from a tear of the vagina or of the external genitals. Hemorrhage from a tear of the cervix is comparatively greater if the uterine body is relaxed, but it will at times continue excessive during decided uterine

condensation. The uterine globe may be felt as of cannon-ball hardness, and yet active bleeding continue from the cervix. Retraction of the uterine body may diminish a hemorrhage from the cervix, but it is not efficient in actually stopping, and not always in materially lessening, the bleeding. Loss of blood from the uterine body will be effectually controlled by retraction of the uterus, but a tear of the neck or of any portion of the genital canal other than the uterine body will bleed, subject to the same influences as those which determine the extent of hemorrhage from a tear in other portions of the system. Such bleeding is, however, apt to be excessive. The entire genital apparatus and contiguous structure are greatly increased in vascularity during pregnancy, the blood-vessels become larger,—may become varicose or aneurismal,—and some of them, as those of the cervix, are devoid of valves, while other vessels are markedly erectile in character, as is most especially the case with those in the bulbs of the vestibule.

Usually bleeding from a laceration is less profuse, less immediately threatening to life, than if it proceeds from patulous utero-placental vessels; but it may nevertheless be very active, especially in varix or in aneurism of the vessels of the lacerated portion, or if the bulbs are torn. Although such hemorrhage usually is less profuse, it may continue for hours, or, by repeated detachment of thrombi, recur at short intervals for days. The aggregate of blood thus lost becomes very great. The magnitude of the detriment to result to the patient must not be estimated entirely by the immediate magnitude of the flow. Any considerable loss of blood from a laceration may lead to secondary hemorrhage from the placental area by inducing relaxation of the uterine fibres, and, further, it may endanger life by gradual exhaustion, or, through lowering the vital powers, encourage the formation of sloughs, and also render the system incapable of resisting the inroads of septic poison. Again, should such a patient escape death from cerebral anæmia, septicæmia, and inflammation, the future still holds in store for her all the ills incident to subinvolution of the genital organs and surrounding tissues. Hemorrhage from a laceration, then, should not be overlooked, nor should its treatment be neglected.

Hemorrhage from the placental area

and that from a laceration may coexist. A too rapid labor or a too greatly protracted labor is liable to cause uterine inertia, and also to produce a laceration of the soft parts. If bleeding is progressing, and the uterine body is relaxed and flabby, it is quite certain that the bleeding is largely, at least, from the severed utero-placental vessels; but blood may at the same time be escaping from a laceration of the cervix. During such an active hemorrhage there is no time to spare for the elimination of a coexisting loss from such a laceration. There is not time for making even a casual examination for such a purpose; and to determine the condition of the cervical and vaginal tissues after labor, a careful and necessarily somewhat protracted examination is required. The deduction is apparent,—viz., that in endeavoring to check a bleeding from the placental area our remedial measures should not be of a kind calculated to increase a bleeding from a laceration, but that greatly to be preferred are those measures capable of controlling either or both forms of hemorrhage.

I have already stated that excessive bleeding may continue from a laceration after the uterine body has been brought into a state of complete retraction, and hence it is clear that our remedial measures should not be limited to that class capable only of securing uterine condensation; for such measures cannot control a bleeding from a possibly, or even probably, coexisting laceration.

After loss of blood the system by reason of increased activity of the absorbents receives septic poison rapidly into itself, and by reason of its enfeebled condition passes quickly, and to a dangerous extent, under the influence of this poison. Our remedial measures, then, should not be of a character to increase to the slightest extent the liability to septic infection.

As is well recognized, traumatic injuries, such as contusions and lacerations, are, in puerperal women suffering from great loss of blood, exceedingly prone to inflammation of an erysipelatous or other adynamic type: hence our remedial measures should not be of such an irritant nature as to increase in the slightest degree the tendency to inflammatory action. Our remedies for post-partum hemorrhage must be of such promptness as to ward off danger immediately threatening, they should be certain

in their action, and, if possible, fraught with no harm, immediate or remote, to the patient. A maximum of promptness and certainty combined with a minimum of noxiousness to the patient must be aimed at in the choice of treatment for post-partum bleeding.

In the light of the various considerations which I have endeavored to present, let us now proceed to analyze, and to endorse or to reject, the more prominent of the numerous agents and measures at present in vogue.

To attempt a consideration of the prevention of post-partum hemorrhage would carry me over the entire management of labor; for its causes may antedate delivery for hours, or may antedate labor itself. However, immediately after the escape of the fœtus the hand should be placed on the abdominal wall over the uterus, and by moderate pressure its retraction be insured about the still-remaining but probably partially-detached placenta. If there is as yet no unusual bleeding, the after-birth should be allowed to remain for ten to fifteen minutes; but if there should be too profuse a loss of blood, and the absence of sufficient retraction should suggest the loss to come from the placental area, the uterus should be made further to retract by compression of it with the hand over the abdomen, and if the hemorrhage does not promptly stop, the placenta should be immediately expressed by Crédé's method, and the uterus should be brought into a further state of retraction by the hand externally compressing it. If there is reason to believe that the bleeding is almost entirely from a torn cervix,—and this conclusion may be arrived at by eliminating, through inspection, a perineal, vulvar, or lower vaginal tear, and by observing a womb retracted about the placenta,—it is still best practice to express the placenta if the bleeding is considerable; otherwise, in the effort to control such bleeding the hand and the attention of the physician will be taken from the uterine body, and its relaxation may take place, with an establishment of a bleeding from the placental area. The same rule in reference to the expression of the placenta holds good if there is *very excessive* loss of blood from a tear of the perineum, or of some part of the vulva, as of the bulb; but if the bleeding from such tears is not excessive, only moderate, the placenta should be

allowed to continue *in utero* the usual ten or fifteen minutes, the uterus being carefully watched while measures are instituted for the control of the loss from the laceration.

The rule to remove promptly the placenta in excessive bleeding from a lacerated cervix, the uterus being retracted, is not an absolute one, provided the physician is favored by having a quick and reliable nurse, and the means are at hand for controlling such hemorrhage,—viz., hot water and the necessary requisites for its injection against the cervix. This measure will not only check the bleeding from the torn neck, but it will also stimulate the uterus into safe retraction.

Ergot is often administered as the child is being born, with the view of preventing hemorrhage, more particularly after the escape of the placenta. The objection for this time of the administration of ergot is that it may place the womb in a state of tetanic contraction before the escape of the placenta, and this structure may thus be incarcerated so firmly that etherization and dilatation with the hand will be needed for its removal. Such an effort does at times follow the resort to ergot at the ending of the second stage, but only as a rare occurrence. The action of ergot is usually noticeable only after a number of minutes have elapsed, so that after the onset of hemorrhage it cannot be relied on to the exclusion of other more prompt and, I will add, more certain agents. During hemorrhage it should always be given hypodermically. When thus administered its action is decidedly more prompt and more certain than when given by the mouth. Yet, in shock and after considerable exhaustion from loss of blood, ergot, when used hypodermically, is an unreliable agent, and if given by the mouth it may produce vomiting, when not only is its oxytocic effect lost, but the prostration from vomiting is superadded to that due to shock or other cause. This drug is of greater value in preventing relaxation of the uterus after it has once been well retracted, and it is of special value in diminishing that gradual leakage from the placental area which at times constitutes a too great lochial flow. It is of little value in checking a hemorrhage actively progressing, because of the slowness and uncertainty of its action. Yet it should always be administered in hemorrhage, be-

cause of its value in maintaining retraction of the womb after that condition has been secured by means of other more prompt agents. I know of no remedy which, acting after its entrance into the circulation, is equal in its oxytocic effects to ergot.

There are serious objections to the introduction, during hemorrhage, of the hand into the uterus or into the vagina to remove a retained or loosely-attached placenta. In hemorrhage the existence of a tear of the upper vagina or of the cervix cannot be excluded. Such a tear may exist, and the passage of the hand into the genital canal, or more especially its withdrawal when grasping the after-birth, will most probably increase the extent of the laceration and add to the contusion of tissues. Hemorrhage from the tear will be increased, the liability to subsequent sloughing or to inflammation be enhanced, and shock induced, or, if present, aggravated, not to dwell on the additional danger of transferring manually septic poison. The latter accident ought never to occur, with the light thrown by our somewhat recently attained knowledge as to its occurrence and its prevention. The bulk of the hand may even originate a laceration in tissues that have been greatly weakened by being compressed and overstretched by the emerging child. If the placenta is so adherent that external manual expression cannot secure its removal, and hemorrhage continues, it will be necessary to introduce the hand promptly but cautiously into the uterus, and properly to secure the detachment and extraction of the after-birth. But it is always unfortunate when such a manœuvre is necessitated.

If the physician does not reach the patient until she is in a state approaching syncope from excessive loss of blood, and the placenta has not been delivered, and the hemorrhage is in abeyance, it will still be best to express the placenta with the hand externally applied, being at the same time exceedingly careful to secure full uterine retraction during and after its expulsion. If the after-birth is still longer allowed to remain, the bleeding may occur at any moment, and a fatal result follow.

If, however, in such a case of extreme exhaustion from loss of blood, the placenta is too adherent to be thus expressed, the bleeding being in abeyance, it becomes a serious question as to the propriety of immediately introducing the hand for its de-

tachment and extraction. The shock thus aggravated may prove fatal in the then low condition of the woman. Under such circumstances it will probably be best while securing retraction, if possible, about the placenta, at the same time and without delay to direct proper measures towards the relief of cerebral anæmia.

If further hemorrhage does not supervene, it would be best, while treating the extreme exhaustion, to wait a short time for some reaction before extraction of the placenta with the introduced hand. If further hemorrhage should appear before reaction is apparent, the critical nature of the case is greatly intensified, and the immediate extraction of the hand in the uterus becomes an unavoidable necessity, with increased probability of a fatal result.

I doubt if the circumstances would ever be such as to warrant permitting the placenta to remain in the uterus for hours or for days, as has been occasionally advocated. In case of hemorrhage after the complete removal of after-birth and of membranes, any clots that have formed in the uterus may be easily removed by external compression without the introduction of the hand.

Now, as to the means for securing condensation after the uterus has been emptied. External compression will usually secure this, but not always. There is excellent authority for introducing the hand into the uterus and, by there moving it about, to excite contraction and retraction. I must, however, deprecate such practice as unnecessary and harmful. There is great probability of lacerating tissues or of increasing existing lacerations, of irritation and of contusion, of producing or aggravating shock. The procedure is a dangerous one, and, moreover, will not always produce uterine condensation, and may increase bleeding from lacerations. A patient thus treated, if escaping present dangers, will, by reason of this special treatment, be in increased danger from inflammation, sloughing, and secondary hemorrhage, and septic infection. The hand should never be introduced into the uterus solely with a view of provoking uterine condensation. Under some circumstances the hand may be introduced for diagnosis, as when there is reason to believe that a portion of membranes or placenta has been left, or that an intra-

uterine tumor is present. Very rarely indeed, however, will it be necessary or justifiable to introduce the hand, except to remove such contents as are so adherent or incarcerated that they cannot be removed in any other manner. It has been advised to carry a peeled lemon or a cloth saturated with vinegar into the uterus with the hand, and then to squeeze it so that the fluid may stimulate condensation. To this procedure there are the same objections as those existing against the introduction of the simple hand. The juice of the lemon or the vinegar thus applied will superinduce contraction, and the hand will not remain long in the uterus, yet the very introduction and withdrawal of the hand are objectionable. The lemon-juice or the vinegar acts largely by reason of its astringent and irritant effects; but it is scarcely sufficiently an irritant to produce in itself special harm. The injection of diluted vinegar into the uterus is effective, doubtless, in securing contraction; the agent does not specially irritate, it does not produce hard clots through production of soft coagula, and it has the advantage of being disinfectant. Yet it is something of an irritant, is often not quickly accessible in sufficient quantity, and cannot well be employed to wash out the genital canal. It is a remedy against which strong objection cannot be urged, but I do not deem it the most feasible or the most desirable one. The use of a per salt of iron in different solutions in water has been largely practised and strongly advocated on the continent of Europe and in Great Britain. Its advocates are among those highest in authority as teachers, writers, and practical obstetricians. It is injected into the uterine cavity in Continental Europe in a deep wine-colored solution, and in Great Britain in the proportion of one ounce of Monsel's solution, or one ounce of liquor ferri chloridi, to three ounces of water.

This remedy cannot be so decidedly harmful as its opponents have claimed. Had it so proved, it would not have continued until now in the confidence of so many able and experienced physicians. There are to my mind, however, objections to the iron salt which do not obtain against some other agents. It acts chiefly by producing coagula in the patulous vessels, and I have already insisted that such thrombi should be assiduously avoided; it also produces hard clots, which remain in the uterine

cavity as irritant masses, provocative of inflammation; it has a minimum of influence in securing uterine condensation; after its employment, and after the hemorrhage has been checked, the womb will be found large and soft, evincing imperfect retraction. In other words, the calibres of the uterine vessels are not obliterated. They must contain coagula liable to all the changes in character and in location that such thrombi under such circumstances are usually liable to. There must be danger of septicæmia or pyæmia resulting, of undue inflammatory action, or, at best, of tardy convalescence. If used at all, I should prefer the stronger solution, as most likely to excite that special desideratum, decided uterine retraction. Swabbing the interior of the uterus with a cloth or a sponge saturated with the undiluted solution of the Pharmacopœia necessitates the introduction of the hand into the vagina, and partially or completely into the uterus, in addition to the other objections to the employment of a per salt of iron. I feel that a resort to this use of iron will be rarely necessitated, and that the agent should be reserved for such very rare cases as do not respond to other treatment.

The tincture of iodine has been recommended as a substitute for the iron salt. It certainly does not produce hard coagula, as does the iron, and must doubtless stimulate uterine retraction. But it is not reliable, except in a somewhat concentrated state, when it is too irritating.

Ice introduced against the cervix, or, most effectively, into the uterus, becomes a decided, and generally a reliable, stimulant to condensation. But the hand must be usually carried into the vagina in order to introduce ice into the uterus. The injection of cold water into the uterine cavity is free from this objection, and is generally reliable. The application of ice to the abdomen, while at the same time compressing the uterus with the hand externally, is also usually of great service. The cold douche over the abdomen from a height is certainly a very powerful reflex stimulant to the uterine fibres, but it floods the patient and the bed. The objection to cold in any form is that it is liable unduly to chill the patient, and possibly to contribute thereby to exhaustion, and thereby to inflammation, etc. An objection even more vital is that in great pros-

tration cold in any form loses its power to excite uterine contraction, and the hemorrhage continues. I have in the past had much satisfaction in the use of cold. In one instance I nearly lost my patient by trusting too long to its influence. I was forced in that case to resort to Monsel's solution in order to prevent a fatal result.

I come now to a remedy not so long in vogue, but one that has in my hands given most satisfaction. I refer to hot water. Freely injected into the uterus at a temperature of about 112° or 115° F., it is a very prompt excitant of uterine retraction.

It will produce this effect with greater promptness than will cold water or ice, and will bring about uterine condensation after ice has failed because of the patient's great exhaustion. It should also be applied externally over the abdomen. I am in the habit of folding a towel as a flat compress, saturating it with water as hot as my hands will possibly endure, and, squeezing out the redundant water, to apply the wet and hot towel on the abdomen, and then, placing my hand on the towel through it, to compress the uterus. The womb will be felt to harden promptly even when the same manoeuvre with iced water has previously not succeeded in obtaining condensation. The remedy may be rendered disinfectant with permanganate of potash, carbolic acid, etc., or even more efficient in producing retraction by the addition of vinegar, though I have never seen this addition necessitated. Hot water controls bleeding from the placental site by securing with certainty prompt and complete condensation. It has no, or at least very little, influence in the formation of thrombi; it washes out all clots and leaves the uterus clean; it will secure condensation after other agents have, by reason of the patient's exhaustion, failed; it is operative when the patient is under ordinary etherization; it controls bleeding from lacerations at the same time that it controls the loss of blood from the placental area; it controls bleeding from the laceration by producing contraction of the vessels, and not by causing coagulation of the blood; it is more invariably attainable than other agents, and can be had in all seasons and in all climates.

The water should be hot enough,—as hot as the hand, or, better, the uncovered arm, can endure. This degree of heat is not usually painful to the patient, excepting to

a limited extent at the external genitals. There is no shock resulting from its use: it is a remedy against shock. It is followed by an increased feeling of comfort. It will regulate irregular uterine contraction by stimulating the entire body into contraction, and will thus check bleeding when superinduced by paralysis of the placental area. It is valuable in "bleeders," or in any case in which there is reason to expect undue loss of blood.

Of all remedies directed towards the stopping of post-partum hemorrhage, hot water thus combines the maximum of promptness and certainty with the minimum of noxiousness to the patient.

To summarize very briefly the line of management, I would say, as soon as the child is born, secure, with the hand over the abdomen, retraction about the placenta; if hemorrhage occurs, express the placenta and continue with the hand externally to effect retraction. If the bleeding does not promptly stop, inject hot water in considerable quantities into the cavity of the uterus. While the injection is being effected, apply or have applied at the same time a hot wet compress over the abdomen, and, by a hand placed on this compress, make firm pressure on the uterus. Ergot should be as soon as possible injected hypodermically, but the above measure should take precedence in time of application.

In post-partum hemorrhage dependent upon a laceration of a cancerous cervix, I have had of late no opportunity to use the hot water. In such a laceration it should be employed; but if the bleeding is not quickly controlled, a piece of cloth saturated with Monsel's solution should be pressed with the fingers against the bleeding surfaces. In post-partum bleeding following placenta prævia I have not used hot water, but should expect its favorable action. In one such case, swabbing the placental area around the internal os with Monsel's solution acted so promptly in preventing death that I should prefer at once to resort to this remedy in such cases. I should never make an application of Monsel's solution by way of merely preventing hemorrhage even in cancer of the neck, nor in placenta prævia; for bleeding after labor is not an invariable accompaniment of either of these conditions.

There are not a few minor adjuvants in the treatment of post-partum hemorrhage, such as compression of the aorta, lowering the head, admitting fresh air, etc., which are more or less valuable, but which do not demand discussion in this paper.

In cerebral anæmia following an excessive loss of blood, the hypodermic injection of stimulants—whiskey, ether, etc.—is of very special value, as absorption in syncope from the stomach is very slow or in total abeyance.

Small doses of an opiate aid in filling the cerebral vessels, diminish shock, and quiet restlessness.

Of other remedies indicated or recommended I must refrain from speaking, because of the already probably too great length of this paper.

WOODILEE: A MODEL LUNATIC ASYLUM.

BY M. S. SEIP, M.D.

FEW institutions of like age, erected for the benefit of the pauper insane, are so well and so widely known as the Barony Parochial Asylum, better known as "Woodilee," located at Lenzie, near Glasgow.

It is not my intention to discuss the various important questions which are no longer matters of experiment in this asylum, but briefly to narrate a few facts learned by a residence in the institution, with every opportunity of examining into its workings.

The building exhibits the general features of the modern British asylum, and is intended for the benefit of the pauper insane belonging to the city of Glasgow. In order that the new plan of utilizing the labor of the patients may be fully carried out, the amount of ground is greater in proportion to the number of patients than at any other asylum in Great Britain,—viz., four hundred acres, with a nominal population of five hundred. The results obtained already by the use of patients' labor have been exceedingly encouraging, inasmuch as it is stated that there is but a trifling difference between the present cost of support in the institution and the cost by the undesirable method of "boarding" out, now obtaining some support from the Scotch Commissioners in Lunacy. There will be in practical operation ere long a

method devised by the present superintendent, Dr. Rutherford,* and styled by him "The System of Location,"—a plan which might be examined in detail with profit by the authorities of some of our crowded Western institutions.

The impolitic plan of boarding out patients, which is neither profitable to the authorities nor just to the patient thus placed in the hands of unsuitable persons and removed from proper medical supervision, seems to be gaining some ground in Scotland, although on the decrease in the "Lunatics' Paradise" at Gheel; but there is little doubt that after a few years' trial of the "system of location" the unwisely economic plan will be discontinued. There is nothing complex or expensive in this system, as introduced at Woodilee. A number of neatly-constructed, substantial buildings are located at suitable parts of the hospital farm, with accommodation for ten or twenty quiet patients, managed by an attendant and his wife, each cottage having a vegetable-garden varying in size from one to two acres in proportion to the number of residents. The patients are employed in various ways,—the majority in the garden, several in the kitchen and bedrooms, and one or two in conveying the requisite supplies from the main building, and doing other chores.

The benefits of the plan are obvious, as the patients are under suitable medical supervision, are in direct association with persons accustomed to the duties and responsibilities of the situation, have little to suggest asylum life, and seem as near to sane surroundings as at present seems practicable and economical.

Two buildings are at present in successful operation, and in the main farm-buildings there will be accommodation for fifty patients, who, under suitable supervision, will perform the bulk, if not the whole, of the farm labor. In the course of another year there is to be one cottage fitted up to be occupied by females, who will likewise have garden-exercise compatible with their strength, and not without reasonable hope of success.

The benefits of open-air labor, whether productive or not, are aptly set forth in the following remarks, quoted from a Report of the Argyll and Bute Asylum when in charge of Dr. Rutherford, in 1872:

* One of the translators of Griesinger's Treatise on Insanity.

"Insanity is a disease of diminished vitality, and when present the system demands a stimulus. Experience proves that there is no stimulus equal to active outdoor employment and abundance of fresh air. The more this system is carried out, the plainer may be the food and the fewer the extras needed to maintain the standard of health, because the patients are brought into the condition and demand rather the fare of ordinary laborers than of lunatics kept under the irritating and depressing influence of forced confinement. Under this system the quiet and order in-doors is increased and the breakages and destruction of property diminished."

The farm and garden furnish employment to three-fourths of the males occupied, the remaining fourth being mainly employed in the wards and shops, four-fifths of the male population performing some variety of useful labor. The working-hours are not lengthy, being from nine A.M. to one P.M., and from two to six P.M., for the majority of those employed. Previous to the division into working-parties for the day they are formed in line for a hasty review by the superintendent and assistant-physician, accompanied by the head attendant.

The females are kept busy systematically with knitting and sewing, five-eighths of the number being employed in that manner, the value of the labor at current wages being one thousand five hundred and eighty-seven dollars for the last fiscal year. The laundry employs forty patients, in charge of three attendants, whose combined labor for one year is estimated at five thousand two hundred and twenty-two dollars. In order to carry out the occupation plan, there are neither sewing-, knitting-, nor laundry-machines in use. From the fact that the patients are derived from the laboring classes, the inference is drawn that employment is most suited to their usual life, and amusement is therefore deemed secondary and made subservient to occupation. There is, however, a sort of holiday on Saturday afternoons, and during the summer months there is a weekly entertainment consisting of dancing, the dances alternating with songs by volunteers from the patients and attendants. This entertainment takes place semi-weekly during the winter months, there being also an occasional concert by amateurs from the adjacent village and from Glasgow.

The treatment of acute cases in general is by rest and free exhibition of easily-assimilated food, chiefly milk and eggs, but an almost absolute absence of narcotics and stimulants. The use of beer, so common in the dietary of British hospitals, has been discontinued, reminding one forcibly of our own institutions. Acute cases, attended with great excitement and violent tendencies, are placed under the direct supervision of two experienced attendants, with suitable instructions, consisting mainly of open-air exercise of several hours' duration daily and continual oversight of the case in the day-rooms until the excitement is sufficiently subdued to require the attention of a single attendant, the case finally receiving the same treatment as the average patient.

There are no special departments for refractory cases, a number of them being found in each division, although suitable provision exists in several divisions for emergencies. By examination of the minute-book kept by the night attendants, and by a series of visits throughout the entire building between the hours of nine and twelve P.M., the results which one might expect from the disuse of narcotics were not found, the records of the female side for the month preceding my visit exhibiting an average of two "noisy" cases, the results being furnished by four persons. Notwithstanding a very liberal number of occupied persons are on parole, under more or less supervision, the granting of parole to unoccupied persons is deemed not advisable.

Although Woodilee was not the first to inaugurate the open-door feature, it is more thoroughly practised than in any other institution. It must not be supposed that patients are allowed more liberty than in the ordinary locked hospital. The main points claimed for the principle are the removal of another feature of resemblance between an asylum and a prison, and the compelling of attendants to exercise closer supervision over their charges. To this end, keys are allotted only to the head attendant of each division, the doors opening into the grounds being locked from six P.M. until eight A.M.

From the official record of accidents, suicides, and important events furnished annually to the Commissioners in Lunacy, it was found that there has been one serious accident since the opening of the asylum

seven years ago,—that of a paroled patient who was killed on the railway.

Various visiting physicians from France, Germany, England, Ireland, and our own country unite in the statement that Scotch lunacy differs materially from that found in their respective countries. By consideration of the following sparse notes of cases admitted since the beginning of the present year, it may be seen that there is not such a wide difference between them and those furnished by examination of the case-books of our average asylum covering an equal amount of time.

James F., admitted January 12, 1882. "Hears voices, and jumped into the Clyde to put an end to it."

Charles G., admitted January 24, 1882. "Attempted suicide by throat-cutting, owing to people putting electricity upon him."

John M., admitted January 30, 1882. "Has various delusions, and, when taken to the police-office, smashed all the windows and lay on his back playing imaginary instruments all night."

Adam W., admitted March, 1882. "Said to be dangerous, and is smeared with his own fæces;" "is unimproved" at last memorandum.

M. H., admitted April 10, 1882. "Ran out of his house naked, has smashed things in the house, and has threatened others." On April 11 he is troubled with insomnia and receives divine commands. On the 18th he is less excited, and works with other patients on the farm.

James R., admitted August 9, 1882. "His wife says he tried twice to stab her. Had to be discharged from employment, as his employer was afraid he would be killed."

Mary McC., admitted January 6, 1882. "Has attempted her mother's life, and exposes her person in public."

Flora McK., admitted February 10, 1882. "Patient cut her throat, and is anxious to be out of control, to kill her daughter."

Jane D., admitted March 18, 1882. "Patient talks incessantly, is excited, incoherent, indecent in her language, and quite unmanageable." On March 28 there is "considerable improvement," and "works daily in the laundry."

Femina D., admitted March 10, 1882. "Talks incessantly. Took a hammer to kill her husband. Attempted to throw several pound-notes in the fire."

Marion B., admitted July 14, 1882. "She sits in a corner shouting incessantly. Occasionally very violent, and smashes everything she can lay hold of." Assistant-physician's note: "She is very much excited, talking, shouting incessantly and incoherently, also continually in action." This condition con-

tinues for six weeks, when "general improvement ensues."

Ann McD., admitted August 17, 1882. "A puerperal case, who attempted suicide and tried to drown her child."

One of our American journals, commenting upon Woodilee, says that "the people have more respect for authority, and hence are easier to manage;" but, if that were the fact, excellent results should be seen in the German asylums; yet a German asylum physician visiting Woodilee recently made the usual statement concerning the difference in patients. One alleged reason for the results accomplished at this asylum lies in the fact that, owing to the poverty of the patients, as a rule, they are promptly brought to the asylum, and are thus placed under the most favorable opportunities for improvement, and therefore more amenable to discipline.

The most important lesson taught by this asylum is that of employment. It is especially important to us in America, for our tendency is towards amusement rather than employment.

While we cannot, for various general and particular reasons, accomplish the results reached at Woodilee, it nevertheless behooves us to be on the alert to keep pace as far as possible with our Scotch brethren.

TRANSLATIONS.

DEAFNESS FOLLOWING MUMPS.—The metastatic disorders occurring in the testes, the ovaries, or the mammary glands during an attack of parotides or mumps are well known, and are usually looked for; but it is less well known that a similar accident may occur in the organ of hearing, and produce changes that result in permanent and complete deafness. Although Toynbee, in 1860, pointed out the fact that the peculiar poison of this disease often causes complete loss of hearing, though ordinarily limited to one ear, and concluded, from its sudden appearance, and the entire absence of abnormal appearances in the tympanum or auditory tube, that the nervous elements were at fault, the fact seems to have been very generally overlooked, and a tendency exists, when it is found, to attribute it to other causes rather than to labyrinthine disease. The views of Toynbee, however, have been recently reaffirmed by A. Buck, who, at the last meeting of the

American Otological Society, reported two cases in which permanent deafness resulted. Moos and Brunner have likewise since reported cases. The last-named authority draws the following conclusions from a review of all the published cases:

"Nervous deafness consecutive to the mumps may be uni- or bilateral; more frequently unilateral (three out of five). It is always complete, and, so far, incurable. It is developed very rapidly,—that is to say, in a few days,—with violent vertigo and subjective noises, symptoms which persist for a time. Fever is not necessarily connected with this invasion of the organ of hearing, because it is not found mentioned in the recorded observations. Pain has been observed only once. There is no loss of consciousness, and the general condition appears satisfactory. The disease appears in the young as well as in adults." He further called attention to the strong resemblance existing between this disorder and the malady of Ménière and to that of Voltolini. In the latter states there is always a sudden exudation, either serous or hemorrhagic, because the general symptoms do not warrant the idea of a purulent exudation. But even when it is serous and tending to spontaneous absorption the prognosis is not the less grave, since the delicate organs of the labyrinth are enclosed in an inextensible bony case. If complete atrophy has often followed parotid-orchitis, we understand why it should do the same in the organ of Corti, only to a degree more marked.

The analogy between these two diseases is indeed striking. As for the explanation given of metastasis, it is not generally adopted: thus, Combeau considers parotides as a general malady, with multiple local lesions (conjunctivæ, pharynx, urethra, testicle, ovary, vulva, etc.), a theory, however, which explains less well than that of Moos the tardy appearance of localizations in other organs than the parotid gland.

Dr. Calmettes reports a case in a child of six, in which both ears were affected, without discharge, pain, or tinnitus aurium, but the deafness was not quite complete. At the end of eight months he could still hear a loud voice, but there had been no decided improvement. It is very probable that an examination of the ear would have revealed a labyrinthine lesion.—*La France Médicale*, No. 8, 1882.

PERI-SPLENIC ABSCESS.—In an article on "Purulent Peri-Splenic Collections," C. Zuber reports two interesting cases in which such purulent collections were found after death, the true character of which had not been suspected during life. In one of the cases the post-mortem revelation was a complete surprise, because no symptoms had been observed calling attention to the left side; and in the other there was an error of diagnosis, as the case had been considered as one of intra-abdominal malignant disease. The notes of these cases are given at length; both had a history of repeated malarial attacks. Following these is a brief consideration of other cases contained in medical literature of this very rare form of disease.

The more important points of this essay may be summed up as follows:

1. In the upper portion of the abdomen are found purulent collections, which are called peri-splenic abscess, although they only touch the spleen at one part of its surface, and are not at all localized in the sub-serous connective tissue of the spleen. They occupy by preference the irregular space bounded by the stomach, the spleen, the colon, and the diaphragm. These collections are the last stage of circumscribed peritonitis, due ordinarily to lesions of the spleen or the digestive tube. The infectious form of splenitis (comprising herein the lesions of malaria), and the round ulcer of the stomach, appear to play the principal rôle in these intra-abdominal abscesses.

2. The purulent collections of digestive origin contain gas, and their character is shown, with remarkable uniformity, by a resemblance more or less complete with pyo-pneumothorax, the more so because they are only separated from the pleura by the diaphragm, which is strongly pushed upward. The nature of these cases of false pyo-pneumothorax will be recognized at first by the existence of grave digestive disorders, and subsequently by the variability, the exaggeration or insufficiency, of the symptoms observed.

The collections of splenic origin are scarcely ever characterized by tumefaction and pain of the hepatic region and the general signs of latent suppuration; rarely, by tumors more or less marked or fluctuating. The diagnosis will scarcely be made except by exclusion.

3. Whatever may be the origin, the depth, or the extent of these peri-splenic

collections, they are not above the resources of modern surgery. It is this practical point of view which will dominate the question. No effort should be spared in order to determine the existence, and then the nature, of the abscess; and exploratory punctures, either deep or multiple, should not be too much feared. Made methodically and prudently, such explorations bring only an insignificant danger, as the recent literature of hepatic abscess abundantly shows: they alone may be, on the contrary, the point of departure of a truly rational and useful therapeutic method.—*Revue de Médecine*, No. 11.

HYDATID CYSTS IN THE HEART AND SPLEEN.—M. Renault reports the following rare case to the Société Anatomique (*La France Médicale*, No. 44):

A man, 63 years of age, was admitted into the Hôtel-Dieu complaining of gastric trouble, with nausea and vomiting. He had become jaundiced for several days, and his conjunctivæ and integument were plainly icteric; his urine contained considerable bile-pigment. He also complained of pains in the right hypochondrium, which were sometimes severe. The diagnosis of hepatic colic was made. Ten days later the jaundice was more marked, the urine was very much diminished in quantity, bowels constipated; there was vomiting of black fluid, evidently hæmatic. The pulse was not accelerated, but there was slight fever (38.3°C.). Physical examination did not reveal any visceral alteration; the lungs were healthy, there was a faint systolic apex-murmur in the heart, and the spleen did not appear increased in volume. Two days later, death from coma and exhaustion occurred.

At the autopsy the liver was soft, fatty, and deeply stained with bile, the cystic duct and gall-bladder were distended with bile, the latter being larger than the fist, but no calculi were detected. The kidneys were swollen and intensely congested, one showing a cicatrix from an old cyst. The lesions of greatest interest, however, were found in the heart and the spleen. No pericardial effusion was present. On the surface of the heart was discovered a tumor, the hardness of which contrasted greatly with the flaccidity of the rest of the organ. This tumor was situated in the left portion of the apex of the heart, embedded in the thickness of the wall of the

left ventricle; it did not extend towards the septum. Upon section it was found to be formed by an hydatid cyst of the size of a hen's egg, containing a slightly opaque liquid. The pouch was yellow-colored; it was spontaneously enucleated after the opening of the cyst. In the spleen, similar cysts were found: two of the size of a pigeon's egg projected from the periphery; another, much larger, about as large as the fist, was seen upon its internal aspect,—looking, in fact, like a second spleen attached to the first. This one contained about ten secondary vesicles as large as marbles, and many others much smaller. Echinococci and hooks were detected in the fluid by the microscope.

It is especially noteworthy in the above case that the liver, the lungs, the brain, and the muscles were entirely free from the parasites, the heart and the spleen being alone involved. Moreover, hydatid cysts of the spleen are usually single; these were multiple; and the heart-lesion was situated near the left apex, whereas ordinarily the cysts are known to appear in the right ventricle or the septum.

SEPTIC POISONING BY INOCULATION OF FLUIDS FREE FROM BACTERIA.—From a series of very carefully conducted observations upon animals, Rosenberger found that the injection of cooked and absolutely germ-free septic poison of malignant œdema, or contagious septæmia, was sufficient to cause a fatal result, and he succeeded in infecting other animals by injecting a proportionately small quantity of the serum or the blood, and from these others in the same way. It is noteworthy that in all these experiments the blood both before and after death was found to contain the same bacterial forms as in the ordinary cases of septic poisoning following the introduction of fluids containing bacteria. He concludes that, through the influence of those agents, the micrococci always pre-existing in the blood, and therefore not pathological in their character, become transformed into the specific septæmic bacteria. He points out also the different results obtained by injecting these fluids into living animals in which the bacteria are developed, and the culture experiments in vessels out of the body where such development does not occur.—*Centralblatt für Chirurgie*, No. 29; Rosenberger, *Ueber das Wesen des septischen Giftes*.

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PHILADELPHIA, DECEMBER 16, 1882.

EDITORIAL.

CHANGES IN THE STRENGTH OF
PREPARATIONS IN THE NEW
PHARMACOPEIA.

THE new Pharmacopœia is before us, a completed work, brought forth with much labor, for the guidance and support of the profession in these United States. It is a handsome volume, whose revolutionary character is not betrayed by its smooth exterior and orthodox-like, pleasant typography. We do not intend at present to write a critical review of the book, but simply to give notice of such of the more important changes as have been made, which it is necessary that the prescriber should bear in mind. In the present editorial we notice only alterations in strength; in a future issue we propose to discuss the additions and dismissals.

First of these are the changes in the strength of the liquid opium preparations, all of which, except paregoric, are so made as to contain ten per cent. of opium. By this change both laudanum and deodorized laudanum are increased according to the official statements of the Pharmacopœia eleven per cent. in strength, whilst the wine, vinegar, and the acetated tincture are much degraded. If, however, the process and directions of the 1880 Pharmacopœia are strictly followed out, the result will be a tincture which will contain on an average about six grains of morphia to the fluidounce, whilst our old laudanum has about four grains to the ounce. Such a change is outrageous enough, and full of danger; but the official statements concealing the change, whether from purpose or from ignorance, are deadly. The only way to prevent fatal error seems to be for the

pharmacist to label his laudanum U. S. 1880, and to put up the old preparation for prescriptions unless otherwise ordered.

The diluted mineral acids are also made of a uniform ten per cent. in strength, involving changes, however, which are not sufficient to affect the dose, except in the cases of hydrochloric and sulphuric acids, the former of which has been increased one-fourth in strength, the latter decreased one-sixth. The fetich of ten per cent. again receives homage in the case of spirits and tinctures, although here the worship is only employed to make the existing chaos more dreadful,—since many tinctures are altered to ten per cent., others are let alone, and others are lowered, or elevated, as the case may be, to twenty per cent. This reckless altering of old preparations without any sufficient reasons is one of the blots upon the new standard authority. It has no more forcible illustration than in the omission from Dover's powder of the sulphate of potassium. In such a change there can be no gain, and there may be serious loss. By the way, the regular decennial alteration of the name of Dover's powder is also indulged in.

Of the important spirits, camphor has been weakened nearly one-third, whilst peppermint and spearmint have been increased nearly sixty per cent. Tincture of aconite root has been reduced one-seventh, and its name has been changed to simple Tincture of Aconite. Compound tincture of catechu has been nearly doubled in strength; tincture of nux vomica has been decreased about forty per cent., of stramonium and of serpentaria thirty-three per cent., of veratrum viride ten per cent., of ginger about forty per cent.

A very dangerous change is in the case of the *extract of aconite*, which is now to be made from the root instead of the leaves, although the old name of *Extractum Aconiti* is retained. There are, therefore, three preparations to which the name may be at present applied by the prescriber or

compounder: first, the old hydro-alcoholic extract of the leaves (*U.S.* 1870); second, the fresh-juice English extract; third, the root extract (*U.S.* 1880). The new extract is probably more than twice as strong as the hydro-alcoholic extract of the leaf, and at least six times as strong as the fresh-juice preparation. The doses of the three extracts, whose name is the same, are, respectively, No. 1, one-half a grain; No. 2, one and a half grains; No. 3, one-sixth of a grain. Now, it is plain that the difference here is enough, under possible circumstances, very seriously to compromise life.

DR. L. P. YANDELL thinks he has been widely misrepresented in regard to his views as to the cause of skin disease. He says, "What I have contended for, and what I have reiterated, is simply this: Malaria is the *chief source of acute skin disease.*" In this correction, it seems to us, he is only a little less wrong than in the misrepresentation of him. To one living in Kentucky the error is, however, a very natural one. In that State malaria is probably the chief cause of all acute diseases, and a very common factor in the etiology of chronic ones.

LEADING ARTICLES.

RECENT STUDIES OF THE MICROBE OF MALARIA, AND OF THE GERMS AND MICROZYMES CONTAINED IN MALARIAL AND IN OTHER SOIL.

CAREFUL investigations recently made by Richard,* Laveran, Kelsch, and very recently by Prof. Antonio Ceri,† with regard to the proximate cause of malaria, have succeeded in obtaining results worthy of our consideration.

* *Der Parasit der Malaria.* L'Union Pharmaceut., vol. xxiii

† Dr. Ant. Ceri, Prof. of Path. Anat. at the University of Camerino, Italy. Arch. f. Exper. Pathol. und Pharmacol., 15 Bd. 3 und 4 Heft, and 16 Bd. 1 und 2 Heft, 1882; Allg. Med. Cent. Zeit., No. 72, 1882, October 9.

Richard‡ found existing in the blood of persons who were suffering from malarial fever a microbe which Laveran has named *Oscillaria malariae*, which seems§ to have the red blood-corpuscles for its special habitat. It develops in them in a manner similar to that in which the rhyeworm does in the lentil. If the blood of an individual suffering from malaria be examined, there will be found among the red corpuscles some which present on their circumference a very minute, light, and perfectly round spot; otherwise they look exactly like, and have the same normal elasticity as, the other corpuscles. Others are met with in which the development of the microzyme has progressed further; the light, clear spot is now larger, and is surrounded by a wreath, as it were, formed of very fine black nodules; around them hæmoglobin, which is easily recognized by its yellowish-green color, is deposited in the form of a ring, which diminishes the larger the microbe grows, until hardly anything is left of the cell but a small, perfectly colorless marginal zone, in which not a trace remains of the hæmoglobin. The body of the red corpuscle is reduced to its envelope, the interior being filled out totally by the oscillaria. The latter has the shape of a circular body the size of the corpuscle, and is surrounded by a ring of black nodules.

The now fully-developed microzyme, which possesses several, though scarcely visible, prolongations, then penetrates the membranè by which it is surrounded, and escapes into the serum of the blood, or rather into the liquor sanguinis. Dr. Richard claimed that he had been able to observe this process a number of times. Occasionally it happens that the fine prolongations or fibres, which possess motion, alone penetrate the membrane in which the body of the microzyme continues to reside. In some cases, here and there, the latter is observed to move, and its fibres oscillate rhythmically, as thin twigs would do when held by their thicker ends and rapidly shaken. These motions seem to act like a whip on the other red corpuscles, thus increasing their rapidity of locomotion. Sometimes the outer, free, and slightly-swollen ends of these fibres become entangled in a loop of the fibrous net. In such a case it is the body of the microbe which evinces the most motion,

‡ Loc. cit.

§ Allg. Med. Cent. Zeit., No. 54, 1882, July 8.

while the movement of the fibre is such as if it were trying to get rid of its entanglement. In about an hour,—sometimes earlier, and occasionally a little longer,—all movement ceases, and only the dead body of the parasite is left. These peculiar movements are noted only in fully-grown microzymes, for in less developed and very small ones no vibrations can ever be observed. The dead parasites stretch themselves out, lose their shape, the ring containing pigment is dissolved, and the whole appears as a gray mass, including a few black nodules. This same fact has been noted also of late by Kelsch and a few other observers.* These liberated nodules are again rapidly absorbed by the leucocytes and taken up into the blood.

Richard was able to demonstrate in the blood of all persons suffering from malarial infection who came under his charge the presence of these microbes, and frequently in very large numbers,—the severity of the disease apparently determining the number of the oscillariæ, and *vice versa*.†

The researches of Prof. Ceri‡ are far more elaborate. They may be divided into three parts:

- a. Cultures of micro-organisms present in different kinds of soil.
- b. Experiments on animals.
- c. Cultures with quinine.

While it would occupy too much space to give all the details of these exceedingly laborious investigations, for the study of which we have to refer the reader to the original,§ we will report the results of each of these parts, and give a *résumé* of the whole.

The fluids of malarial soil not cultivated in an aquitrinum|| contain only germs (spores); but the latter are far less numerous in malarial soil to which good plaster of Paris (gypsum) has been added. If natural and gypsomed malarial soil, however, be kept in an artificial aquitrinum, at the necessary temperature, many varieties of schizomycetes will develop themselves.

If malarial soil which is cultivated in an artificial aquitrinum be exposed for five

hours to a temperature of 70° to 95° C., or for four hours to a temperature of 105° C., all varieties of schizomycetes which have been developed are destroyed, and only the spores continue to live. This explains the fact why during the hot, dry summer months there is very little malaria, but as soon as the temperature of the atmosphere begins decidedly to decline, the spores commence their development, and malarial infection is the consequence.

While cultures of malarial soil made under the high temperature mentioned cause the development of the different kinds of schizomycetes which primarily are present in the cultures of natural malarial soil, they produce a less septic fermentation and a weaker alkaline reaction of the culture-fluid. A similar difference is also noted in successive generations,—viz., in cultures from cultures.

Notwithstanding the fact that boiling the *superficial* layers of the fluid in culture-vessels, closed by sterilized cotton, totally prevents the momentary effect of the contact of atmospheric germs, it exerts no influence whatever on the rapidity and intensity of the development of the schizomycetes, which by infection have been transferred to the cultures.

If the *whole* culture (of soil) after infection be boiled in culture-vessels closed with sterilized cotton, the development of the schizomycetes is retarded for a few days, and the consequent putrefaction of the culture-fluid for a still longer time. This effect boiling also has on cultures from cultures.

The more frequently successive generations of the low organisms used for the purpose of infection have been cultured from former cultures, the more decided is the influence which the boiling of the *whole* mass under the precautions mentioned exerts in retarding the development of the microzymes and the putrefaction.

The number of successive cultures from the same original infectious material (microzymes) has by itself no influence on the development of the schizomycetes, but the greater the number the more apparent and decided is their effect in retarding the putrefaction of the culture-fluid. In the case of a great many generations, decomposition of the fertile cultures totally ceases, and the development is one perfectly non-putrid (proving the absence of septic micrococci).

* Allg. Med. Cent. Zeit., 1882, No. 54, p. 694.

† Ibid., 2d column.

‡ Patholog. Institut in Prag. Allg. Med. Cent. Zeit., 1882, Nos. 72, 73, 74, October 9, 13, 16, etc.

§ Arch. f. Experiment. Patholog. und Pharm., xv. 3, 4, and xvi. 1, 2, 1882.

|| An apparatus specially constructed to be impermeable to water, and, if needed, to air, and so arranged that, while it can be drained or water added, the soil may be kept excluded from all deleterious influences.

The effect boiling has in retarding the development of schizomycetes and putrefaction is regulated by the length of duration of boiling: the longer this is continued, the more the effect mentioned is augmented.

The more numerous the generations of the schizomycetes of soils are that have been artificially cultivated, the more intense becomes their vulnerability against boiling: if they are very numerous, a boiling temperature will destroy them.

Mineral manure* has not prevented the development of schizomycetes nor that of the micro-organism which by Klebs and by Tommasi-Crudeli has been described as *Bacillus malarie*. When soil was impregnated with this mineral manure and these mycozymes were cultured artificially in them, the resulting cultures evinced no differences from the same types of microbes cultivated in common soils.

When high and progressive temperature acts on dry malarial and other common soil, the effect is as follows:

a. The development of schizomycetes is gradually retarded, this retardation being exactly proportional to the high degree of the temperature and the length of time that the soil is exposed to it.

b. The septic fermentation of the fluid in fertile cultures is progressively retarded and at last totally prevented, the degree of temperature and length of exposure being here also proportional to the effect.

The power of resistance against high progressive temperature for germs (spores) and low organisms of dry malarial soil varies between 180° and 190° C.; of garden or cultivated soil, between 160° and 180° C. All cultures which had been instituted in soil exposed to a temperature above 160° C. were invariably and permanently aseptic.

On germs and low organisms perfectly dry and cultured in malarial and other soil by the addition of urine and then transferred (cultivated germs), the same conditions of temperature exert an analogous effect on retardation of development and on decomposition, but the power of resistance has in cultured germs narrower limits than in natural spores, it varying there between 130° and 140° C.

Schizomycetes of different origin, as, for

instance, those of the atmosphere, resist the effect of continuous boiling, and do this the more the older the culture from which they were taken. Those derived from a typhoid intestine are destroyed when boiled for two hours, while the bacillus of pemphigus and the bacteria of anthrax are permanently annihilated.

While a momentary boiling is sufficient to protect a *pure* culture-fluid against the deleterious contact with the atmosphere, *infected* fluids have to be boiled for a long time to destroy the low organisms contained in them, the duration and degree of heat depending upon the nature of the microbes, and in some even the boiling-temperature not being sufficient for this purpose.

The second part of Ceri's work† treats of his experiments on animals.

Subcutaneous injections of fluid of malarial soil to which gypsum had been added caused in a rabbit mild, irregular febrile seizures, lacking the intermittent type, while such injections of fluid of natural malarial soil caused in other rabbits longer-repeated and intensive febrile attacks, showing plainly the intermittent character.

The pyrogenic effect of the first injections was milder than that of the second kind. Soils kept in artificial aquitrines possessed evidently a greater power of infection.

Subcutaneous injections of gelatin-culture of natural malarial soil caused in rabbits long-continued and intensive febrile seizures of the intermittent type.

Injections of fluid of malarial soil which had been cultivated in aquitrines and exposed to a temperature above 100° C. resulted in rabbits in the same attacks, but of a milder nature.

When the fluid of artificially cultured malarial soil had been exposed for ten days to a temperature of 35° to 40° C., hypodermic injections instituted with the same produced in rabbits intense febrile paroxysms of a decidedly intermittent type and continuing for a long period.

Gelatin-cultures of malarial soil were exposed to a temperature above 100° C. and then injected into a rabbit. On the fourth day the animal was attacked by a mild febrile seizure which did not recur. The same gelatin-cultures not exposed to a

* Consisting of lime, 1 : 20; sulphur, 1 : 50; borax, 1 : 15; chloride of lime, 1 : 20; arseniuretted sulphur, 1 : 50; charcoal, 1 : 15.

† Allg. Med. Cent. Zeit., No. 73, October 13, 1882; from Arch. f. Exp. Pathol. und Pharm., 15 Bd. 4 Heft.

high temperature and injected into another rabbit caused within an hour an intensive febrile seizure, which recurred. Two rabbits were then taken: into one was injected natural malarial soil exposed to a temperature above 100° C., and into the other the same soil not influenced by the high temperature. Here the great difference as to pyrogenic effect became very apparent: the first rabbit was attacked by moderately intensive intermitting febrile seizures, while the second suffered from one of the most fulminant forms of malarial infection, with melanæmia and rapid death.

Subcutaneous injections of the third successive generation of natural malarial soil, whether exposed to a temperature above 100° C. or not, caused in rabbits only mild, recurring febrile seizures, but not until several days had elapsed after the introduction of the soil into the circulation.

Fourth generations of the same nature injected into dogs produced local inflammation, and, after a few days, mild recurring febrile paroxysms.

The fluid of a natural malarial soil, which when subcutaneously injected into a rabbit had evinced pyrogenic quality of an intense degree, was now evaporated, powdered to dust, and given to be inhaled by another rabbit. The same experiment was repeated with dogs. The result so far as any changes in bodily temperature were concerned was a negative one. The dust had been introduced into the bronchial tubes.

The fluid of natural malarial soil cultivated in aquitrines produced, when subcutaneously injected into dogs, far more intensive febrile seizures of intermittent character than did injections which had been previously made into the same dog of the fourth successive culture of malarial soil exposed to a temperature above 100° C. Natural malarial soil, if previously filtered through common filtering-paper, caused, if injected subcutaneously, no local phlogosis. The filtering had no effect upon the pyrogenic symptoms.

The intravascular injection of gelatin-culture of natural malarial soil produced in a rabbit immediate increase of temperature to a very high degree. The blood of the animal, examined on the second day after, presented many spores.

Even the intravascular injection of the fifth successive culture, which had been

exposed to a temperature above 100° C., brought about in a dog a very great increase of temperature immediately, notwithstanding the culture had been a perfectly non-putrid one.

Subcutaneous injections of the second successive culture of malarial soil, to which lime had been added, induced in a rabbit very intensive fever and local inflammation. Such an injection made in a rabbit with the second successive culture of malarial soil, which had been manured with ashes, caused fever, peracute sepsis, and an intensive local phlogosis.

Generally when either the fluid of natural soil or that of cultures was injected, at the places of injection no local reaction was observed. Those cases in which high fever appeared were accompanied by enlargement of the spleen, and melanæmia of the spleen and of the spinal cord.* There were also present in the blood of such animals spores, and these were also found in the spleen and in the spinal marrow; sometimes bacilli were met with, and especially very long ones in the spleen. The effect of the high temperature decreased the pyrogenic effect of the fluids of the soils, causing sometimes also a retardation. In a similar manner does the influence of numerous generations act.

Very interesting is the third part of Ceri's investigations.† He instituted a series of 40 cultures, which contained different quantities of quinine from 1:100 up to 1:100,000. They were each infected by a drop of turbid fluid of malarial soil. The development was absent up to 1:900. From 1:1000 to 1:1500 non-putrid development began. With small doses of quinine, the smaller the doses the more rapid, intensive, and putrid was the development.

In a series of 18 progressive cultures containing quinine respectively from 1:500 up to 1:9000, all infected in the same manner, but with gelatin-culture of malarial soil, the development was absent from the solution of 1:1500; from 1:2000 up to 1:3000 non-putrid development existed; from 1:9000 the development began to be accompanied by putrefaction. This agrees nearly with the power of disinfection of quinine.

Another series of experiments (18) was made, in which the percentage of quinine

* Loc. cit., p. 927.

† Allg. Med. Cent. Zeit., No. 74, p. 938 et seq.

varied from 1 : 500 to 1 : 9000, and each solution was infected with a drop of the blood (containing the *Bacillus malariae*) of a rabbit into which had been injected cultures of malarial soil. Here the development continued absent up to 1 : 2000, and at 1 : 2250 it was aseptic. The *Bacilli malariae* did not develop in the fertile cultures, which contained only vibriones.

In a similar series of 18 parallel experiments, in which the quinine solutions had been infected with a drop of a culture containing schizomycetes of very different origin, and fluid of malarial soil, the development ceased with 1 : 850. Where the dose of quinine was less, the development was always a septic one.

Different cultures instituted with different larger proportions of quinine, but not under 1 : 600, and which after an infection with cultures of malarial soil, or by successive cultures of cultures, had continued sterile, showed after a second thorough infection sterility with a proportion of quinine of 1 : 580, development with 1 : 600.

With other culture-fluids, the infective material, however, of which was formed by the natural fluid of malarial soil, after a second thorough infection development began at the proportion of 1 : 400.

The development which commenced after second infection was accompanied by a very weak alkaline reaction and a very slight odor of decomposition. The long, thin, homogeneous bacilli (*Bacilli malariae*) never made their appearance, the odor evidently being due to septic bacteria.

Generally the chemical reactions of fertile culture-fluids depended upon the proportion of quinine and the quality of the infectious germs.

Microscopical examination of the cultures, the infection of which was made with natural fluids of malarial soil kept for a long time in artificial aquitrines, showed invariably a decrease in the number of schizomycetes as soon as the proportion of quinine increased. In large proportions of quinine only spherical or bacillus-like organisms of most minute size came to development.

It may be taken for granted that the *muriate of quinine in the proportion of 1 : 800 prevents the development of any infectious germs*; but the fertility of a culture may depend upon the quantity of the infectious material. By the aid of a second thorough infection, cultures which after

the first had been sterile for a long time may be made fertile.

The *natural* germs and low organisms of the soil are those which possess the greatest power of development. If they are cultivated in culture-fluids, or if they migrate through the interior of an animal organism, their power of infection decreases rapidly and progressively with each successive generation.

The very long, thin, homogeneous bacilli (*Bacilli malariae*) very rarely appeared, even in cultures which contained very little quinine. In a series of eighteen cultures they were totally absent, notwithstanding they had been very numerous in the infectious fluid.

Having given a *résumé* of each part of Ceri's investigations, it may be well to endeavor, considering the many relations these facts bear to each other, to build up a theory based upon them.*

In the atmosphere and in the soil there are germs and spores which may develop themselves to higher organized forms under certain favorable conditions, according to differences in the infectious low organisms which are perhaps changing continuously. This development nearly constantly causes in the fluids and moist substances, in which they progress, chemical changes always differing according to the nature of the microzymes, and according to the chemical composition of the material which serves them as their habitation. The *toute ensemble* of these changes is called "fermentation." In case this development takes place in nitrogenous or albuminous substances, the highest chemical change induced by this development is the *putrid fermentation*, or putrefaction.

The germs and low organisms contained in the soils and in the atmosphere, possessing fully the septogenic functions, have been named by Ceri *natural germs*, while he calls those *cultivated germs* which are the result of artificial culture,—i.e., which by artificial culture develop from the natural germs. Successive generations brought about by artificial cultures retard and weaken the putrid fermentation which is induced by low organisms in nitrogenous culture-fluids: this retardation and this diminution may increase up to total cessation of putrefaction. Brought under artificial conditions, these germs and low

* Arch. f. Experiment. Patholog. und Pharmac., 16 Bd. 2 Hft., 1882; from Allg. Med. Cent. Zeit., No. 74, p. 938 et seq.

organisms suffer with each successive generation an increased retardation and weakening of their septogenic functions, and at last lose them entirely.

The influence of heat upon the germs is felt in two main directions, causing—1, retardation of their development up to its arrest; 2, retardation of septic fermentation up to its arrest. These consequences become, however, more apparent if the heat exerts its influence on artificial than on natural germs; and in successive generations this effect of heat can be still more noted, or, in fewer words, *cultivated germs possess less power of resistance to heat than do natural ones.*

The effect of muriate of quinine upon the germs is strikingly analogous to that of heat. Quinine also causes retardation up to total arrest of development of the germs and low organisms, and retardation up to total arrest of the putrid fermentation induced by them. And probably it will ere long be shown that none of the so-called anti-fermentative and antiseptic substances exert any other influence.

The analogy existing between the influence of heat and that of muriate of quinine permits the logical deduction of an analogy of cause, which latter may be considered as an inhibiting and destroying one.

The fermentation, too, which in the animal organism is caused by the germs—*i.e.*, the fever—is diminished and retarded or prevented when the inhibiting causes have acted upon the germs. In this way may be explained the retarded febrile seizures which appear after injection of successive cultures. The development of the germs may proceed without synchronous putrid fermentation (non-putrid development): it is probable that in such cases the low organisms present in the animal organism are not accompanied by fever, and the former are innocuous.

It should be mentioned that the non-putrid development cannot be explained by supposing the destruction of certain special organisms inducing the fermentation, as in such a case putrefaction and non-putrid development would have to be sharply divided from each other, while in reality, in consequence of the action of inhibiting causes, gradual retardation ensues, and we come by degrees through a series of gradual transitions to the arrest

of septic fermentation,—a proof that the germs causing the putrid fermentation are gradually deprived of their functions, until the latter are destroyed without destruction of the germs themselves.

That this essential fact will play an important rôle in our doctrine of pathology cannot be doubted: what changes it will bring about it is difficult to determine at present. But we may already imagine a plausible hypothesis concerning the decline and gradual disappearance of some epidemics, as, for instance, the cholera. Individuals first attacked may be said to have been invaded by natural germs, the power of development and septogenic functions of which are very intensive. This explains why the types of disease appearing at the beginning of an epidemic are so grave and fatal. Gradually successive generations of the infecting microzymes form themselves, in consequence of which are developed gradually milder types of the disease, until at last their spontaneous cessation occurs, and there is a disappearance of the epidemic.

Regarding malaria we may suppose that the low organisms causing it very rapidly lose their infectious qualities, so that after their immigration into one animal organism they lose the faculty of inducing the disease in another. But in case they return under favorable conditions they may, by again becoming natural germs, again acquire their infectious qualities. In this manner we may explain the fact that localities having previously enjoyed immunity as regards malaria may become infected, notwithstanding malaria is not a contagious disease. The germs, even if they by becoming cultivated germs lose their infectious power, may, when carried into a suitable locality, and under favorable conditions, regain that power by again becoming natural germs. That malaria has been carried by human beings into localities hitherto free of malaria, has been proved by undeniable facts; and Ceri himself has been able to observe grave malarial epidemics as they broke out at Spinetoli, in the province of Ascoli-Piceno. But infected localities may become disinfected of malaria, whenever favorable conditions, which are necessary to preserve the *natural* quality of the germ, cease to exist, or are removed.

It is further probable that not all infectious microzymes lose their power of

resistance so rapidly whenever successive generations have developed themselves under *not natural* conditions, and it may be supposed that some germs find in the animal organism a soil favorable for their *natural* development. To these may belong microbes which cause anthrax and other contagious diseases. But systematic investigations will be necessary to find out the laws under which inhibiting causes act upon successive generations so as to deprive them of all or of some of their natural functions. Pasteur's experiments are explained by Ceri's researches.

HUGO ENGEL, M.D.

507 FRANKLIN STREET.

PROCEEDINGS OF SOCIETIES.

PATHOLOGICAL SOCIETY OF PHILADELPHIA.

THURSDAY EVENING, NOVEMBER 23, 1882.

The PRESIDENT, Dr. JAMES TYSON, in the chair.

Hypertrophy of heart due to valvular lesions.
Presented by Dr. M. O'HARA.

J. H., male, æt. 30 years, laborer, contracted J. syphilis when 18 years of age. Health good until within past three years, when he began to suffer from pain in the left breast, palpitation of the heart, and slight dyspnoea after violent exertion. Gradually becoming worse, and unable to work, he was admitted into St. Mary's Hospital in June, 1882. He then complained of great pain over the upper part of the sternum and in the left arm and shoulder. He had lost considerably in weight, his appetite was poor, and albumen was present in small proportion in his urine; casts were absent. He had then marked dyspnoea, which increased rapidly, until sleep could be obtained only in the upright position. There was no evidence of pulmonary trouble. With the forearms flexed to a right angle the brachial arteries became prominent at each impulse of the heart, the pulsation of the carotids was wavy and prolonged, the temporals were tortuous and visibly pulsated, no retinal arterial pulsation was seen. Retinal venous pulse was marked, but no venous pulsation was detected elsewhere. The left præcordial region was prominent. The apex-beat was most distinct in the sixth and seventh interspaces, on a perpendicular line running midway between the left nipple and anterior border of the left axilla. The heart's impulse was usually forcible and diffused, but at times it became weakened and wavy. In the second left intercostal space a systolic impulse

was observed. The pulse varied from 80 to 120 per minute, struck the finger with considerable force, but at once lost most of its volume. All these phenomena were exaggerated by raising the hands above the head. The radial pulses were unequal, but the brachial arteries presented no differences. No hepatic pulsation was felt. The cardiac area of complete dulness was nearly twice its normal size, the increase being downward and to the left. Over the second right costo-sternal articulation the closure of the aortic valves was distinctly heard, and with this a slight diastolic murmur. A systolic murmur was also heard over the same spot. The systolic murmur was nearly lost in the carotid and subclavian arteries, but the diastolic one remained distinct. On a line with the second costal cartilage, over the sternum and to the left of this bone, the diastolic and systolic basic murmurs were most intense. Over the cartilage of the left fourth rib the murmurs heard at the base of the heart were less distinct, or were obscured by the development of other murmurs. In this situation, a short, sharp, presystolic murmur, apparently prolonged into a systolic one, was detected. At the apex and just above it the systolic murmur became intensified, its blowing character aiding in differentiating it from the short harsh murmur which immediately preceded it. From the fourth to the seventh rib, and from the sternum to a point about five or six inches to the left, a diastolic murmur of considerable intensity was heard. The character of the diastolic murmur over this area was different from that presented by the second-sound murmur at the base of the heart, and its intensity was much greater. Posteriorly, at the lower angle of the left scapula, a blowing systolic murmur, entirely deprived of its harsh, presystolic complication, was heard. Dr. Eskridge thought the physical signs justified him in venturing the diagnosis of constriction and regurgitation at the mitral orifice, a rare form of aortic regurgitation produced by the inability of one of the aortic semilunar valves to close, while the others acted properly, great hypertrophic dilatation of the left ventricle, and, to a less extent, of the left auricle, and aneurismal dilatation of one of the great vessels, probably of the pulmonary artery near its origin. The patient rapidly sank; œdema of the lower portion of the trunk and lower extremities, with effusion into the pericardium, pleuræ, and peritoneum, developed. He died, exhausted, in August, nearly two months after admission to the hospital.

Sectio cadaveris.—Brain.—Some venous congestion of the pia mater. The brain-substance and the ganglia nearly normal in appearance.

Thorax.—The pericardium was nearly filled with serum. The only evidences of inflammation were a few patches of recent lymph at the left and upper portion of the sac. The

heart weighed eighteen ounces, the increased weight being chiefly due to eccentric hypertrophy of the left auricle and ventricle. The right ventricle was dilated, with slightly-thickened walls. The aortic valves were insufficient and thickened. The posterior leaflet was normal in shape, but the others curled upon themselves on the aortic side of the orifice. The stenosis was slight. The mitral orifice was button-hole-shaped, and the valves failed to close on account of calcareous deposits in their tissues, this degeneration also involving the inner surface of the left side of the auricle contiguous to the valves. The auricular surface of the valves was fairly smooth, but in the ventricle, just beyond the valves, and attached to them, hung a bony substance about one-eighth of an inch in diameter. The left auricular appendix was much hypertrophied. The valves at the tricuspid and pulmonary orifices were normal. The pulmonary artery was considerably dilated. The pleural cavities contained several ounces of serum. There were old adhesions at the apex of the right lung posteriorly, and at the same part of the left lung anteriorly. Several patches of recent lymph were also found at the lower part of the left pleural cavity.

Abdomen.—The peritoneal cavity contained considerable serum, and its veins were engorged. The liver was enlarged, with distended veins. The kidneys were highly congested. The spleen was double its normal size, and softened.

Abscess of the liver following arrested menstrual discharge; pyæmic abscesses of lungs and spleen; perforation of the bowel; severe heart-complications; death. Presented by Dr. J. T. ESKRIDGE.

M. D., æt. 28 years, was a factory-girl, whose father and two sisters had died from heart-disease. She had had two attacks of inflammatory rheumatism, but had never complained of heart-trouble. Her fatal illness began at night, by arrested menstrual flow and severe cramping abdominal pain, coming on after exposure to cold during the previous afternoon. Fever and pain in the right lower side of the abdomen continued for three days, when she was able to work again for about a week. Jaundice began early, was well marked during the first three weeks, was slight afterwards, but lasted until her death. Her symptoms three weeks after the beginning of the attack, when admitted into St. Mary's Hospital, in Dr. Hickman's wards, were great prostration, emaciation, loss of appetite, pain in the right inguinal and lumbar regions, and irregularly recurring chilly sensations. Two weeks later, when first seen by Dr. Eskridge, the liver-dulness extended nearly to the anterior superior spinous process of the ilium, and the normal tympanitic note of the right inguinal region of the abdomen was replaced by one bordering on dulness. The

tenderness was so great that neither fluctuation nor a tumor could be detected, if such existed. Great tympany soon developed and obscured the physical signs. A pyæmic condition, from which the patient perished in about two weeks, now set in, attended by chills, fever, sweating, low temperature, and diarrhœa. A few days before death she passed considerable pus by the bowels. The surface-temperature taken over the chest and abdomen showed the latter to be about two degrees warmer than the former, but all parts of the abdomen were of nearly the same temperature. Stenosis of the aortic and mitral orifices, with insufficiency of the valves of the latter, and a dilated hypertrophy of the left auricle and ventricle, were recognized during life.

The post-mortem examination revealed the diagnosed lesions of the heart, and demonstrated the possibility of visible left auricular pulsation. The liver weighed eighty ounces (the right lobe being alone enlarged), and contained a large abscess, surrounded by several smaller ones, with which it was connected. The cæcum and its appendix were surrounded by about six ounces of pus, the latter being circumscribed by adhesions. Two openings were found in the black and gangrenous cæcum, one where its appendix had sloughed off, the other due to perforation of the bowel by the pus. The portion of the liver external to the hepatic abscess was firmly adherent to the abdominal wall, and from this point (about two inches above the crest of the ilium) the pus had burrowed its way and formed a sinus leading to the right inguinal region under Poupart's ligament. A direct communication between the liver-abscess and the accumulation of pus surrounding the cæcum was seen.

Dr. ESKRIDGE thought that the demonstration of the possibility of visible left auricular pulsation in the second left intercostal space, and of the occurrence of a functional murmur in the pulmonary artery without dilatation of that vessel, was worthy of notice at present, as Dr. Broadbent had so recently advocated views almost diametrically opposite. Dr. Eskridge considered mitral stenosis of not infrequent occurrence, and said that, with care, the mitral presystolic murmur was not usually difficult to detect. The four physicians, including himself, present at the autopsy then thought that the hepatic abscess was secondary to the inflammation and supuration around the appendix and cæcum; but he, after carefully analyzing the clinical evidence and pathological lesions in favor of each condition, was satisfied that the case began as one of primary abscess of the liver following exposure to cold while the patient was menstruating.

The discussion on both the preceding specimens, which presented somewhat similar heart-lesions, was now opened.

Dr. J. C. WILSON said that there was one

point of special clinical interest in Dr. Eskridge's case,—viz., the chronology of the lesions. He thought that the extensive multiple abscesses of the liver and lungs were secondary to the abscess around the caput coli. In some cases the determination of the primary source of the emboli was difficult, but in this case it was perfectly clear.

Dr. BRUEN said that he would like to go on record among those who had observed auricular pulsation in cases of mitral obstruction in which the stenosis was extreme.

Dr. NANCREDÉ remarked that in his experience flexion of the thigh on the abdomen was an almost invariably early symptom in cases of perityphlitis, from which he would infer that, as this thigh-flexion did not occur in Dr. Eskridge's case until within ten days of the fatal termination of the case, the pericæcal abscess was secondary to that in the liver.

Dr. TYSON said that he had been much impressed with the marked increase of the surface-temperature in the neighborhood of the abdominal abscesses as compared with the general body-temperature. As to the chronology of the various affections, he was inclined to believe that Dr. Wilson was correct.

Dr. ESKRIDGE said, in reply to Dr. Wilson, that he could appreciate how the perityphlitis might be mistaken for the primary trouble, and the hepatic suppuration for the secondary: such a mistake (for he felt certain that the abscess of the liver was the primary affection) was made by all, including himself, who were present at the post-mortem examination. The pathological and clinical facts in favor of primary hepatic abscess were given at some length in his remarks in connection with the presentation of the specimens. In brief, the clinical features were as follows: deep and early jaundice following exposure to cold, pain in the right side of the abdomen, attended by fever and gastric irritability of a few days' duration; an intermission of a week, during which she was able to work, followed, after which gradually increasing weakness, with dull abdominal pain attended by loss of flesh and appetite, confined her to bed; ten days before death the development of intense tympany, associated with flexion of the right thigh upon the abdomen. The hepatic suppuration was confined to the right side of the right lobe, all the smaller abscesses directly communicating with the large one, and the left lobe of the liver being apparently healthy.

Tongue and larynx from a case of elephantiasis Gracorum. Presented by Dr. A. C. W. BEECHER.

The case from which these specimens were removed was reported in the *Photographic Review of Medicine and Surgery*, No. 6, vol. i., August, 1871. Mr. —, æt. 26 years, born

in Cuba, of Spanish parents, married. His father was living when the patient died in 1872; the mother died when he was an infant. He was wet-nursed by a colored house-servant, who was single but had had several children by different individuals. She was healthy so far as known, with the exception of sores upon her feet. He had none of the diseases of early life, except measles and mumps. His health was good up to fifteen years of age, when superficial yellowish-pink spots appeared upon his body, but unaccompanied by pain or itching. They remained about one year, and disappeared during a voyage to Spain. While there, he was attacked with neuralgia of the little fingers, extending along the course of the ulnar nerves to the elbow, which was relieved, and he returned to the West Indies. Six months after his return he experienced a second attack, which lasted for one month. In 1862 he came to this country to study, and after one year became the subject of repeated catarrhs, chiefly affecting the throat. Itching of both forearms and legs soon after developed. In 1866 oedema of the hands and feet, which did not extend beyond the wrist or ankle, set in, producing a sensation of stiffness of the fingers and toes. Blebs then suddenly appeared in varying size upon the dorsum of the hands and fingers, extending over the whole length of the latter. At times a sharp pain in the hands and fingers, arousing him from sleep, would herald one of these bullous attacks. The bullæ contained a whitish opaque fluid, and when burst were succeeded by dark-brown scabs transversely cracked and fissured over the joints. Under these crusts were excavated ulcers. The finger-tips and the ends of the toes presented similar ulcers, over which the nails grew, and these latter being brittle broke off when long. Next frequent hemorrhages from the nose, coming on while laughing or in mental or physical excitement, were noted. The nose became tender, was much swollen, and discharged moderately offensive pus, and the bridge of the nose began to sink, gradually assuming its appearance in the photograph here shown. A year after the hands were attacked, the face became similarly affected, the ulcers on healing leaving distinct cicatrices. The eruption never entirely ceased, new bullæ and ulcers forming while others healed. There was marked emaciation, with absence, in many spots on the body, of the hair, which was everywhere scanty, and the skin was of a dusky hue. The muscles of the arms were much wasted, and the skin presented small white cicatrices. Over both patella and olecranon processes large, hard, firm, reddish nodules were seen. The hands were much deformed, with wasted, contracted fingers, having numerous small hard tubercles scattered beneath the skin of the dorsum of the hands. Numerous ulcers, mostly covered

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with irregular black scabs, covered the backs of the fingers. A markedly varicose condition of the veins near the wrist was observed. The hair of the head was normal in quantity, but was hard and harsh, while there was total loss of eyelashes and eyebrows, and the beard was scanty. There was a large hard tubercle over one frontal boss, near which was an old ulcer. The nose was much sunken; there was an ulcer of the right zygoma, covered by a black rupial-like scab; the face was marked with scars, and the ears were likewise deformed, with traces of numerous cicatrices. Many of the teeth were decayed and broken off close to the gums. The tongue was much thickened, with greatly-enlarged papillæ. The velum palati was almost gone from ulceration, and yellowish-white tubercles existed in the pillars of the fauces. The larynx was much contracted by thickening of its mucous membrane. The epiglottis was about twice its normal thickness, and had several well-marked tubercles upon it. The voice was much impaired, weak, and had a peculiar husky sound. There were deep sloughing ulcers over each tendo Achillis. Tactile sense was very much impaired, as in the dorsum of the hands, where the sense of touch was almost absent, and what was recognized was referred to some point in the neighborhood of the point of contact. The sense of pain was almost entirely absent in the hands and forearms, becoming more marked as the body was approached: a pin passed through the pulp of the middle finger gave absolutely no pain. The difference between very hot water and that of an ordinary temperature was readily perceived: moreover, there was general increased cutaneous sensibility to temperature-changes. Taste and smell were somewhat impaired. Very slight anæsthesia of the trunk existed. Sight was good, although prolonged use of the eyes was painful. The general health of the patient was fair. There seemed to be no trace of venereal disease. Sexual power was absent. Frequent neuralgic pains of the legs and arms were complained of. The atrophy of the hands, feet, fingers, and toes was appreciable from month to month. The cornea next became ulcerated, the conjunctival surfaces became adherent, and almost total blindness ensued. Swallowing was almost impossible towards the last, owing to the pain produced by the throat-ulcers, and because from imperfect closure of the rima glottidis fragments of food entered the larynx, producing violent and exhaustive coughing. Respiration was also so much impeded that he died October 29, 1872, partly from dyspnoea, partly from starvation. Before death he suffered intensely.

Autopsy.—Rigor mortis well marked. Great emaciation of the entire body noted. The surface of the tongue was fissured, the papillæ enlarged, with the remains of tubercles well marked towards its base. The epiglottis was

curved on its long diameter, thickened and stiff, with its upper margin eroded by a large ulcer. A deep ulcer was situated in the mucous membrane near the apex of the left greater cornua of the hyoid bone. Narrowing, from thickening of tissues, involved the trachea at its upper part, and produced such stenosis of the chink of the glottis that an ordinary quill could not be passed between the vocal cords. Upon section of both ulnar nerves near the elbow, extensive degeneration was detected.

This case was examined both by Dr. Duhring and by Dr. R. M. Bertholet,—the latter making a laryngoscopic examination,—who both considered it to be of the mixed variety,—viz., tubercular and anæsthetic leprosy. The case is interesting both from its rarity and the possibility of other cases being brought here from California and New Brunswick, in both of which places it is not uncommon. Again, its resemblance to syphilis at first led me into error, although I recognized something strange about the disease. The late Dr. Maury saw the case with me, and had no doubt of its syphilitic nature until Dr. Duhring's examination convinced him that it was really leprosy. Erasmus Wilson says, "The resemblance to secondary syphilis is so striking that an error is certain, excepting on the part of those who have had an opportunity of seeing and observing leprosy."

Dr. WILSON asked whether the family history had been investigated.

Dr. BEECHER replied that he carefully questioned all concerned, but had ascertained nothing special, except that when such cases occurred in wealthy families the fact was always hushed up.

Dr. WILSON said that in this connection he would call the attention of the members to a very able article in the last issue of the *American Journal of the Medical Sciences* (by Prof. White, of Harvard), where the writer took the view that leprosy was contagious, maintaining that it should be investigated where it was of rare and recent occurrence. Dr. Wilson also referred to its occurrence among recent immigrants in certain of our Northwestern States.

Dr. CARL SEILER said that Dr. Beecher had asked him to examine the specimens of the larynx and tongue of the case of elephantiasis. The dorsum of the tongue was deeply furred, and the papillæ appeared enlarged. The epiglottis was thickened, very stiff, and rolled on its long axis like a dry leaf. On its upper free margin was a crescentic ulcer, with raised edges, and numerous smaller roundish ulcers were scattered over the laryngeal surface of the epiglottis. Extensive ulceration of both ventricular bands and vocal cords existed, so that the opening of the ventricles was almost entirely occluded. The ulcers were symmetrical, and most marked towards the anterior insertion of the vocal cords. About one-quarter of an inch below the cords was a

cicatricial band projecting from the sides of the subglottic cavity, and leaving an elliptical opening, through which a crow-quill could hardly be passed. Below this obstruction the mucous membrane of the subglottic cavity was studded with small round ulcers, while the trachea seemed healthy. No further lesions could be detected by the naked eye, although doubtless such had existed, but had been obscured owing to long preservation in alcohol. Dr. Seiler regretted the absence of the records of the laryngoscopic examination made before the patient's death: still, the lesions seen in the specimen would explain the symptoms of dyspnoea, aphonia, and dysphagia, and it was astonishing how the patient could have respired at all through the narrow opening left by the cicatricial tissue below the glottis. The chief interest, however, centred in the great similarity of the lesions in this unique case with those found in syphilis and lupus of the larynx. He had seen ulcerations in syphilitic laryngitis almost identical in form and location with those seen in the specimen, and he remembered having seen two or three specimens of lupus of the larynx when in Vienna which bore a strong resemblance to syphilis. Lupus and leprosy of the larynx could not be diagnosed from each other by laryngoscopic examination alone, but other signs and symptoms, outside of the larynx, had to aid in the diagnosis. Thus, in syphilitic laryngitis there were always sharply-defined bands of a deep-red color on the free margin of the velum palati. In lupus, affections of the skin of some part of the body always preceded, coexisted with, or shortly followed the manifestations of the disease in the larynx, while in leprosy the larynx was usually attacked later in the disease, when other portions of the body clearly showed marks of the pest.

Dr. LITTLE remarked that, having conversed with Dr. F. N. Enders, who had seen a great many cases of leprosy in the Sandwich Islands, he had been interested to note that the eyelids were affected in the early stages, ectropion resulting, and the conjunctiva and cornea, or even the whole eyeball, becoming involved. The affection of the eyelid is sometimes the first symptom, or occurs during the first or second year of the disease. The lids were involved in the case described, and the eyeballs subsequently.

Dilatation and atheroma of the pulmonary artery, with an opening through the interventricular septum. Presented by DR. BRUEN.

Examination of the heart.—Left side: slight ventricular hypertrophy; mitral valves somewhat thickened at their margins, with roughening of their auricular aspect; valves competent; the left auricle is normal, as are also the aorta and the aortic valves. Examination of the right side is of most interest. Two of the semilunar leaflets at the mouth of

the pulmonary artery are nearly destroyed by atheromatous changes; the third segment is much thickened, and projects as a leaf-like fold, roughening the mouth of the pulmonary artery. This vessel is dilated to nearly twice its normal size, forming really an aneurismal dilatation. The vessel-walls are covered with a fringe of vegetations of inflammatory origin or due to atheromatous changes. The right auricle is very small and imperfectly developed, the bulk of its cavity being formed by the auricular appendix. The tricuspid valves are much thickened, but are competent, probably. Between the two ventricles is an orifice large enough to admit the forefinger. It is directly beneath one of the tricuspid leaflets, and is lined with endocardium, and must have allowed a free interchange between the blood of the two ventricles. The walls of the right ventricle are thinned, and its cavity somewhat dilated. Dr. Bruen said that this case was interesting because perforation of the ventricular septum is often congenital and dependent on obstruction of the orifice of the pulmonary artery, the perforation being due to the pressure of blood within the replete right ventricle. This pressure causes an arrest in the development of the ventricular septum. The pathology of the present case probably is as given above; but there was no pulmonary-artery obstruction. A similar case is recorded in the *Medico-Chirurgical Transactions*, vol. xv., by Fletcher. (2) There was no cyanosis. Cyanosis is usually dependent on a deficiency of cardiac evolution, or else on retarded evolution of the pulmonary artery or aorta. As a consequence, there is deficient cardiac power to carry on the circulation; or the pulmonary artery or the aorta is narrower than normal, so that in any of these conditions venous repletion results, and cyanosis. Admixture of the venous and arterial blood is, then, not the usual cause of cyanosis, although it may be a factor. Walsh says, "Grant that perforation of the ventricular septum coexist with contraction of the pulmonary-artery orifice, and cyanosis seems to become a certainty." In our case there is an example of incomplete development of the ventricular septum and deficient development of the right auricle, without cyanosis. (3) Pulmonary-artery disease is consistent with a fair amount of general health, and that compensation by the right heart may occur, just as in cases of aortic disease. (4) Descriptions of pulmonary-artery disease call attention to bronchitis, pneumonia, and hydrothorax, as sequential states. In our case no such complications were present until just before death, when she finally succumbed to congestion of the lungs, added to the cardiac state. (5) The aneurism of the pulmonary artery formed a pulsating tumor on the left side of the sternum, between the second and fourth ribs, extending outward from the border of the sternum, and including an area

covered by a trade-dollar. (6) Over the tumor a post-diastolic and a presystolic bruit-like murmur could be heard at a point between the second and fourth ribs, while close to their junction with the sternum a hoarse systolic murmur could be heard. The bruit was localized; the heart systolic murmur was carried out into the entire arterial system.

Dr. BRUEN then detailed at length the differential diagnosis of these murmurs. During life, dilatation of the pulmonary artery, with mitral obstruction, had been the diagnosis. The patient was a woman, æt. 24 years, a syphilitic, and was under observation from November, 1878, to July, 1882.

Dr. ESKRIDGE had not had any difficulty in differentiating a presystolic from a diastolic murmur. He thought the leathery thickening of the mitral valves in the specimen presented by Dr. Bruen was sufficient to give rise to a mitral presystolic murmur. If we adopt the theory of Dr. Austin Flint, Sr., that a mitral presystolic murmur may occur in aortic regurgitation when the mitral valves are perfectly healthy, it seemed to him that there was no difficulty in accounting for the presystolic murmur from the regurgitant blood from the pulmonary artery into the communicating right and left ventricles of this case, especially as thickening, loss of elasticity, and some rigidity of the mitral valves existed. The chronometry of the pulsation that occurred in the left second intercostal space he thought could have been obtained by adopting Sanson's modification of Balfour's method of comparing the time of the occurrence of the præcordial pulsations.

Dr. SHAKESPEARE said that he had been struck with one point of great interest in connection with inflammation of the lining coat of the pulmonary artery, as evinced by the vegetations. These growths are very rarely found in the venous current. He had certainly never seen any other specimen, although he did not doubt that some had been seen or reported by other observers. Arterial blood seemed a requisite for the evolution of such diseased action. Evidently, the site of the perforation, being just below the aortic and pulmonary valves, brought about just this necessary prerequisite,—viz., free admixture of arterial blood with the venous.

Dr. WILSON called attention to the evident relation between the incomplete ventricular septum and the condition of the pulmonary artery, which is greatly dilated and atheromatous and presents the appearances often met with in the aorta, very rarely in this vessel. The wall of the right heart is relatively thickened. This fact, together with the position of the opening in the interventricular wall, which favors the flow of the blood from the left ventricle towards the pulmonary artery, renders it probable—almost certain—that the more forcible contraction of the left heart has constantly forced a portion of its arterial blood

into the right heart, thus increasing the current entering the pulmonary artery, and occasioning, first, hypertrophy of the right ventricle, and, second, a subacute inflammatory process in the pulmonary artery itself, in consequence of the increased volume and force of the blood-current. Dr. Shakespeare's observation that such growths as are here seen require for their existence arterial blood is in accordance with this view.

Sarcoma of the prostate gland. Presented by Dr. W. H. HUGHES.

W. G., aged 35 years, was admitted to the University Hospital, under the care of Dr. H. R. Wharton, suffering from retention of urine. Before his admission, numerous unsuccessful attempts had been made to empty the bladder by means of a catheter. On admission, the patient complained of much pain in the hypogastric region, which was the seat of a smooth, rounded swelling reaching almost to the umbilicus. He stated that he had gonorrhœa some years previously, which had been followed by a troublesome stricture, which had been perfectly relieved by the passage of bougies. For more than a year previous to his admission he had suffered at irregular intervals from difficulty in urination. The urine had never been bloody, but its passage had often been attended by great pain. It was found impossible, on account of numerous false passages, to introduce a catheter into the bladder. On introducing a finger into the rectum, the prostate was felt smooth, rounded, and immensely enlarged. The patient was put to bed, ordered suppositories of belladonna and opium, and to have a warm poultice applied to the abdomen. This treatment relieved him almost immediately, and urination became freer. For a few days he did well, but the difficulty in urination soon began to increase, and by the fifth day after his admission the symptoms had become so urgent that it was deemed advisable to repeat the attempt to pass a catheter. This attempt was as futile as the first. Then aspiration of the bladder through the abdominal walls was attempted, but only a small quantity of blood was obtained. In introducing the canula it gave the sensation of passing into a solid body; and careful palpation revealed the fact that there really was a solid body apparently occupying the whole bladder. It was now decided to open the urethra at the base of the bladder through the perineum, and the operation known as Cock's was selected. The operation was followed by the escape of a small amount of urine. After this the patient did well, with the exception of an attack of dysentery, until the ninth day after the operation, when peritonitis suddenly developed. He died on the following day.

Autopsy, two hours after death.—Upon opening the abdomen, a thick, yellowish-red, purulent liquid, having a urinous odor, was

found bathing the intestines, the coils of which were everywhere bound together by recent adhesions. The omentum was in places firmly adherent to the intestines, and contained numerous irregular nodulated masses, varying in size from that of a pea to that of a hen's egg. These masses, on section, presented a whitish-yellow color. In the lower part of the abdominal cavity was a large, irregularly-shaped tumor, firmly adherent to the small intestines, colon, omentum, and walls of the pelvis. On careful dissection, the tumor was found to originate in the prostate gland. On section, it presented in parts the characteristics of scirrhus, in others those of encephaloid; in other places there were large loculi, with reddened, irregular, friable walls filled with a liquid similar to that found in the abdominal cavity, though no connection between these loculi and the abdominal cavity could be found. No trace of normal prostate gland nor seminal vesicles could be discovered. The bladder, containing a few ounces of urine, was found in front of the upper portion of the growth, its upper boundary almost on a line with the umbilicus. The anterior wall was apparently perfectly normal; its posterior wall, resting on the tumor, was thickened, raised, red, and velvety. The ureters were normal and opened in the usual position. The urethra, as far as could be seen, ran along the anterior surface of the tumor, and was not involved by it. The weight of the growth was five pounds two ounces. The kidneys, stomach, lungs, and intestines were normal. The peritoneum and capsules of the liver and spleen contained several secondary growths. The brain was not examined. Microscopical examination showed the growth to be a typical small round-celled sarcoma. The secondary deposits were similar in structure to the primary growth. The submucous and muscular tissues of the bladder-walls were somewhat infiltrated. The growths in the capsules of the liver and spleen had commenced to penetrate those organs.

Melanotic sarcoma of orbit, with metastases to liver, etc. Presented by Dr. SHAKESPEARE.

The patient was an elderly woman, who had been operated upon by Dr. Heyl, at the Episcopal Hospital, some six months before death, the whole contents of the orbit having been then thoroughly removed. Recurrence took place, the cavity being filled with a black fungating mass; the left nostril gave vent to a blackish discharge, and the various internal organs became involved, notably the liver. Death took place from exhaustion. Most of the metastases are entirely melanotic, but some in the liver show at their periphery a distinct whitish zone. Dr. Shakespeare remarked upon the singular fact that orbital growths were usually melanotic, although they might not spring from the choroid coat of the

eye, as in this case, where all pigmented structures had been removed months ago.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

A CONVERSATIONAL meeting of the Society was held at the hall of the Society, November 8, 1882.

DISCUSSION ON DR. PARISH'S PAPER.

Dr. William T. Taylor said that he had, during the earlier years of his practice, been afraid to introduce the hand into the uterus; it was considered dangerous; for it was a kind of *noli me tangere*, whose cavity must not be invaded. He had, however, changed his mind, and now regarded the hand as really the first thing which was commonly "on hand" for use in post-partum hemorrhage and other troubles. For, if the child had recently passed through the os uteri, it was not generally so much contracted but that the hand could be conveniently and carefully introduced in order to remove the cause of the hemorrhage, clots, etc., and then, by pressure externally, the uterus will contract and expel the hand, when the hemorrhage will cease.

Dr. Ludlow inquired whether Monsel's solution produced a true coagulation. He thought it was rather a carbonization. He would like Dr. Smith to state whether he knew of any death resulting from the use of the iron hæmostatics, particularly Monsel's solution, the only one he had used. He had been one of the first to use Monsel's solution in these cases, and had used it often, by means of a special instrument of his own make, there being no other at that time to be had, and never had any trouble. Dr. Parish himself, in the paper, had spoken of it as a last resort. Why last resort? He recalled a case where a patient had been bleeding for some time, and in which ergot, ice, and other methods had failed. He had never used Monsel's salt in so recent a case before (this, it must be noted, was before hot water was suggested), but he used it here with success. He would not use it always, of course, but was not afraid of the kind of coagulation produced, which he believed to be a direct chemical change by the hæmostatic upon the blood. Our chemists can soon determine this. Besides, by the most of means used coagulation is produced.

Dr. Ludlow said that he was aware that deaths had occurred from the use of Monsel's salt, but he had referred in his question only to its use, as Dr. Barnes had advised, after the uterus had been emptied. It was only under such circumstances he used it. He very soon found that it would not permanently stop the flowing of blood when even the small papilloma, not larger than a usual wart, existed in the uterus. The abuse of an article, or

a wrong mode of using it, or the unskilful performance of an operation, is no argument at all against its proper use. He advised Dr. Smith to try the iron hæmostatics and report the result. Dr. Ludlow said that he could detail numerous cases of hemorrhage controlled by iron hæmostatics when every other means had failed. It is dirty, undoubtedly; but that can be no objection when life is involved.

Dr. Wm. S. Stewart was an advocate of the use of iron. He had not seen any bad results from it. He never allowed the clots to remain, but as soon as the patient had reacted he removed the clot and syringed the uterine cavity, repeating this latter operation for several days. He was glad to learn that this system of syringing had been adopted at the Woman's Hospital. The use of iron and hot water will be rarely necessary if labor is properly conducted and not hastened; but no clots or shreds must be allowed to remain. If we carelessly pass over these, we will have profuse hemorrhage, which will require strong treatment. We should explore the uterus thoroughly, examining to the fundus. If the nails are trimmed and the hands clean, no injury will be done. He had sometimes been obliged actually to scrape off the placenta, but had seen no harm result.

Dr. Hewson had recently seen Dr. J. Marion Sims perform the operation of incision of the os uteri, and, suspecting that the circular vessels might be wounded, Dr. Sims had used cotton saturated with dilute tincture of chloride of iron, one part to four, and packed it well into the vagina, back of the cervix. The application was considered on the occasion by Dr. Sims the best antiseptic and styptic.

Dr. Blackwood agreed with Dr. Parish's advice to retain the placenta fifteen or twenty minutes. He thought that the vessels of the placental site are filled with clots. He had made a post-mortem examination of the body of a woman who had died of pulmonary hemorrhage just after the third stage of labor, and he had found the uterine vessels filled with clots. He did not think that the hand, if carefully introduced into the uterine cavity, could do harm. He often did it, placing the other hand at the same time on the abdomen. In treating hemorrhage, he had used vinegar and lemon-juice, but did not like ice. Hot water is the remedy, but in one case he had seen decided shock from its use. He did not believe in iron.

Dr. Welch thought that Dr. Parish had overestimated the danger of introducing the hand into the uterus, which is always greatly relaxed and offers but little resistance to such introduction. It is necessary to insert the hand in order to discover the cause of the hemorrhage. If it results from laceration, that condition can be recognized, and if the uterus contain clots we can turn them out. The late Dr. Charles D. Meigs used to insist

upon this both in his lectures and his writings. Dr. Welch wished to emphasize the advantage in the use of vinegar. He had seen a case of post-partum hemorrhage in which the bleeding had been very extensive; the color of the lips had even been lost, and the patient could only speak in a whisper. The hand was introduced and the clots turned out, but this did no good. Ice was also used, without effect. The patient was so far gone that she did not even feel the ice within the uterus. A clean white rag was saturated with vinegar and introduced, and in an instant the uterus contracted. The patient rallied, and no further hemorrhage occurred.

NEW YORK COUNTY MEDICAL SOCIETY.

NOVEMBER 27, 1882.

DR. A. JACOBI, as an appointed committee of one, reported strongly in favor of extending the summer vacation for the public schools in the city of New York from the 1st of July until the second week in September. The report was adopted by the Society.

The outgoing President, Dr. F. R. STURGIS, in the course of some remarks, spoke of the successful prosecution, under the new statute, of certain unlawful practitioners in this city, thanked the Society for the courtesies and honor which it had extended to him, and introduced the incoming President, Dr. DAVID WEBSTER.

"Malaria in Children" constituted the title of the scientific paper of the evening, which was read by its author, Dr. L. EMMET HOLT.

The peculiar manifestations of malaria in children was a study which had been much neglected. Many foreign text-books on the diseases of children did not even allude to malaria. Symptoms apparently peculiar to the digestive and the respiratory systems in children were so often present in various affections—among others, that of malaria—that a correct diagnosis was liable to be overlooked. Again, malaria occurring in children often manifested itself so insidiously that the physician's attention might not be called to it until after it had made considerable progress. The author would confine himself to a consideration of the symptomatology and the diagnosis of this affection. The etiology, the pathology, and the treatment did not differ materially from the same in adults.

He would speak principally from experience derived from observation of one hundred and eighty-four cases, most of which were seen at the Northwestern Dispensary, in this city.

Many of the abrupt cases presented symptoms of vomiting, drowsiness, prostration, fever, severe pain in the epigastrium, etc., and on examination there would be found enlargement of the spleen, often tenderness, and occasionally there was also tenderness over

the hepatic region. In cases commencing less abruptly there was usually headache, generally frontal, muscular weakness, anorexia, constipation or diarrhoea, pallor of the face, a dark line under the eyes, nausea, with occasional vomiting, tongue heavily furred, epigastric pain, the patient hot and chilly by spells. Periodicity could not be relied upon to any great extent in diagnosis. A positive chill was present only in a minority of the cases, and then in the patients most advanced in years. Nearly all of the cases observed were under eight years of age. Fever was one of the most important and constant of all the symptoms. There were very few cases in which close observation did not show some rise of temperature, as indicated by the thermometer, at some period during the twenty-four hours. The fever had variations as in the adult, and in general fell under one of three groups: first, cases in which the temperature rose quite high at the onset, remaining so with very little variation for twenty-four, forty-eight, or even seventy-two hours, then assuming a remittent type; second, cases in which the fever at first was slight, gradually increasing in intensity, showing less a periodic character, perhaps finally becoming almost continuous, not going above 103° F.; third, cases in which the fever was distinctly remittent or intermittent from the onset of the disease. The author believed that the general impression was that the temperature rose higher than clinical observation proved to be the fact. He had seen but three cases in which it went above 106° F. The usual range of temperature was from 101° to 103° F. Sweating occurred in a little more than one-fourth of the cases, and was more constant than the cold stage. It made its appearance later and was much less marked than in adults. Cerebral symptoms of some kind were manifest in most of the cases; usually there was frontal headache. There might be simply stupor or sleepiness, most frequently at the time corresponding to a paroxysm. Convulsions occurred in four cases and were repeated in two. All terminated favorably. Vertigo was noticed only in three cases. Pain at the epigastrium occurred in most of the cases. In about one-third it was said to be severe, and it seemed to have no relation to the taking of food. The author believed it to be neuralgic and dependent upon congestion of the stomach. Pain was less frequently present at the splenic and hepatic regions. There might also be pain and soreness in other regions of the body. Splenic enlargement was usually present, and in children commonly took place in a direction upward and backward, and was, therefore, liable to be overlooked. Enlargement of the liver was much less marked and less constant than enlargement of the spleen. Disturbance of digestion was almost uniformly present. There was vomiting in many cases,

occurring often at the onset of the paroxysm. The tongue was commonly coated, and its clearing up was one of the surest signs of recovery. Constipation was present in many of the older patients, while diarrhoea might be present in the younger. Bronchial catarrh and pneumonic symptoms might be present. In six cases there was incontinence of urine, in six painful micturition, and in a less number retention.

The complications of malaria in children might be divided into three groups,—those related to the respiratory system, to the gastro-intestinal system, and to the nervous system. The frequency of respiratory and gastro-intestinal complications might be explained by the fact that the malarial poison was supposed to find access to the body by either of those channels; but the author thought the more probable explanation was the fact that these were the most vulnerable portions of the child's organism. Bronchitis was perhaps the most frequent of all the complications, and it might be present in both the acute and the subacute cases. It might lead to pneumonia. He believed that some cases presenting nearly or quite all of the symptoms together with the physical signs of pneumonia, and mistaken for such, proved to be cases of simple malaria. Such symptoms, if the cases were malarial, disappeared under the administration of quinine. Gastro-intestinal complications had been mentioned in the symptomatology. The sensory system was more frequently disturbed than the motor. Various spasmodic disorders had been observed. Cases had been recorded of torticollis. He had seen epilepsy and chorea. There were disorders of micturition in fifteen cases; in two there was nephritis; in three there was vaginitis, which seemed to be due indirectly to general debility induced by malarial poison; there was hemorrhage from the gums in two cases, epistaxis in one, tonsillitis in two. Relapses were more likely to occur in children than in adults.

No single symptom could be relied upon in the diagnosis of malaria in children. Perhaps the most important one, when taken in connection with certain other symptoms which have already been mentioned, was enlargement of the spleen. Too much dependence should not be put upon the presence or absence of periodicity. The disease with which malaria in children was most likely to be confounded was typhoid fever. In certain cases the course of the temperature seemed to be the only means of distinguishing between the two affections. A normal morning temperature after the third day almost certainly excluded typhoid fever.

The discussion was opened by Dr. J. LEWIS SMITH, who said that he had seen a great many such cases in private practice in the part of the city where most of Dr. Holt's patients had lived. He thought cases of

malaria might properly be divided into two classes,—those which were due to marsh miasm, and those which were of a remittent character and due to a polluted soil or sewer-gas. He believed that the majority of these cases apparently of malaria in children were really cases of typhoid fever. The latter disease occurring in children presented very different symptoms from what it did when it occurred in adults. The symptom of tenderness on pressure over the abdomen, to which the author of the paper had alluded, was present in many cases over the inner side of the thigh also. In the cases of typhoid fever, he found that the symptoms, although they might be mild, would run on for twenty to thirty days, in spite of the administration of quinine. Some cases, however, did not continue longer than a week. He preferred to call them cases of remittent fever rather than malarial fever, as the former term would not commit us with regard to the essential nature of the disease. It was so spoken of by Dr. West, of London, who also believed that it was really typhoid fever. There was not usually diarrhoea, for the reason that there was not the same degree of intestinal catarrh that occurred in the cases of typhoid fever in the adult. Certain cases were cited in illustration of the typhoid character of the disease, as indicated by its affecting several in a family or hospital ward.

Dr. JOHN C. PETERS said there was great difficulty in diagnosing malarial fever in children under five years of age; above that age it was much easier. Certainly, some cases of ordinary remittent fever due to sewer-gas poisoning simulated malarial fever closely. He knew of several cases in which the paroxysms were distinctly intermittent in type, and the only possibility of malarial poisoning was through sewer-gas. He had known cases to occur in children immediately after birth. He also mentioned an instance in which the convulsions were exceedingly persistent, continuing at intervals for three days.

Dr. FRUITNIGHT thought malaria was evidently toxæmic, and was more likely to be introduced into the body through the respiratory or the digestive system than by other ways. Being toxæmic, its effects were manifested more particularly upon the nervous system, either in a sthenic or an asthenic manner. Diseases which began with a chill in the adult usually began with a convulsion in children. By the administration of quinine, the convulsions, which corresponded to the period of chill in the adult, were relieved. He asked if the bronchitis, laryngitis, etc., might not be due to general sluggishness of the circulation, causing stasis in various organs of the body.

SORE NIPPLES.—Fissured and tender nipples may be protected by painting them with gutta-percha dissolved in chloroform.

REVIEWS AND BOOK NOTICES.

RHEUMATISM, GOUT, AND SOME ALLIED DISORDERS. By MORRIS LONGSTRETH, M.D. Wm. Wood & Co., New York, 1882.

An encyclopædia or a treatise on one of the principal divisions of medical literature—for example, medicine, surgery, or obstetrics—may appear in response to a distinct local or general demand, but there should be only one object in writing a monograph,—the dissemination of new ideas. Temptation to depart from this rule has probably often occurred, for the greatest delineator of human nature has written,—

"Perseverance . . . keeps honor bright.
To have done, is to hang,
Quite out of fashion, like a rusty nail,
In monumental mockery . . .
For emulation hath a thousand sons,
That one by one pursue; if you give way,
Or hedge aside from the direct forthright,
Like to an entered tide, they all rush by,
And leave you hindmost."

Painstaking care, thoroughness in attention to detail, and good judgment are conspicuous all through this work; but we do not recognize the terse clearness, with individuality, which is calculated to attract attention to a new description of a disease so widely disseminated and so imperfectly understood as rheumatism.

At the same time, the volume has a *raison d'être*, since it is encyclopædic in its completeness. Certain sections are most excellent,—for instance, those upon the pathology and morbid anatomy of the processes engendered by rheumatism. The clinical descriptions of endocarditis and cerebral rheumatism are disappointing, because too didactic.

The chapter on treatment is brief, although all methods receive mention. The treatment with bromide of ammonium is endorsed in the following terms: "After becoming familiar with its effects in rheumatism generally, it becomes comparatively easy to recognize, without perhaps being able to define or portray, the class of cases in which the remedy is likely to be useful and successful" (p. 204). Perhaps this sentence will not unfairly represent the tone pervading the entire chapter. The volume concludes with a description of gout. This disease is a *bête noire* of the medical man,—the vaunt of the quack. Since we so imperfectly comprehend the *action of alteratives*, possibly the author is discreet in devoting only six pages to the treatment of this disease.

E. T. B.

NITRO-GLYCERINE AS A REMEDY FOR ANGINA PECTORIS. By WILLIAM MORRELL, M.D., M.R.C.P. Detroit, Michigan, 1882. Pp. 78.

The nitrites being but recent acquisitions to the *materia medica*, and certain of them having proved of such utility in the treatment of

one of the most painful and distressing of maladies, it is evident that a work on the above subject from the pen of so careful an observer as Dr. Morrell must be of particular interest.

In this very interesting and valuable *brochure* the author gives a synopsis of the physiological action of nitro-glycerine on the lower animals and man, and makes note of the similarity of its action and that of the amyl salt. A number of cases are cited in which nitro-glycerine was used, and which, we may parenthetically add, no one can review without feeling assured of its extraordinary efficacy in angina. Some very interesting facts connected with its administration are shown in its apparent safety in cases where considerable cardiac lesion existed, and in the varying susceptibility of different patients to its influence. In one of the above cases a one-half minim dose of a one-per-cent. alcoholic solution produced decided effects, while another case could take one hundred minims.

E. T. B.

GLEANINGS FROM EXCHANGES.

REMOVAL OF THE STERNUM.—In the Surgical Section of the German Association, recently meeting at Eisenach (*Allg. Wien. Med. Zeitung*, September 25), Prof. König, of Göttingen, related a case of the total removal of the sternum, which he regarded as unique. A lady had been under the care of various surgeons during two years and a half for a tumor of the sternum, which, although only moderately sensitive, continued steadily to increase. When she came to Prof. König the tumor much exceeded a child's fist in size, was sarcomatous in appearance, and moderately hard, and sprang from the sternum, extending laterally to the ribs. Before proceeding to its removal he practised removal of the sternum on some rabbits, and ascertained how difficult it was to effect this without opening the pleura, or even the pericardium. Having carefully divided the cartilages of the ribs in succession, he passed his finger under the bone which was about to be removed. Until this, nothing was amiss; but now an aperture was found to exist in the right pleural cavity, giving rise to a clucking sound of the respiration. He immediately occluded this with some antiseptic gauze, but then discovered that the tumor was adherent to the pericardium, an aperture into which was announced by the recurrence of the clucking sound. This was stopped up like the other, as was a hole which soon afterwards appeared in the left pleural cavity. In spite of all this, the patient only suffered from dyspnoea for a short time. The antiseptic dressing was first removed at the end of twelve days, when a portion of the skin of one of the flaps was found gangrenous, and the heart surrounded

with pus. The next dressing took place five days later, and complete healing of the wound only took place very slowly. The patient was exhibited. The total removal of the sternum, attended with openings into the three cavities of the chest, must surely be a surgical *unicum*.—*Med. Times and Gazette*.

DISLOCATIONS OF THE THIGH REDUCED BY NEW METHODS OF MANIPULATION.—In cases where reduction of the femur by manipulation in the usual way, with the aid of anæsthetics, has failed, or is inapplicable, and as a substitute, in many cases, for anæsthesia, assistants, and mechanical power, Mr. Kelly (*Dublin Journal of Medical Science*, October) proposes the following methods:

For posterior dislocations.—The patient is laid prostrate upon the floor. Three strong screw-hooks are inserted into the flooring close to the perineum and each ilium of the patient, and to these hooks he is secured by strong bandages or rope. The injured thigh is flexed at right angles to the patient's body; the foot and lower extremity of the tibia are placed against the perineum of the surgeon, who, bending forward, with the knees slightly flexed, passes his forearms behind the patient's knee and grasps his own elbows. Reduction is now accomplished by drawing the femur upwards; but circumduction may also be practised; the surgeon, stepping backward, then extends the limb, and lays it by the side of its fellow. In sciatic dislocations, in order to liberate the head of the bone from the foramen, a bandage may be passed around the thigh, close to the trochanter, by which an assistant may make traction.

For anterior dislocations.—The patient is placed upon a table of such elevation as to have his pelvis nearly as high as the trochanter of the surgeon. A bandage around the pelvis, and secured to the side of the table farthest from the dislocation, affords counter-extension. The surgeon, with his face directed towards the dislocated joint, and standing on its inner side, with his trochanter pressed against the femur, now bends the leg behind his back, and grasps the ankle with the corresponding hand. Reduction is effected by rotating or turning his body partially away from the patient, thus making traction on the femur in the most favorable direction, and at the same pressing its head towards the acetabulum with the disengaged hand.

OVARIOTOMY WITHOUT LISTERISM.—Lawson Tait read a paper at the last meeting of the British Medical Association, containing a statistical account of one hundred consecutive cases of ovariectomy performed without any of the Listerian details (*Brit. Med. Journal*, October 28). Of this number only three died, and one of these died of accidental suffocation. He attributes his success to—1, the total abandonment of the clamp (Mr. Spencer Wells's) treatment of the pedicle; 2, the

adoption of Keith's method of treating the peritoneum; 3, the adoption of Koeberlé's and Keith's method of cleansing the peritoneum; 4, increased personal experience; 5, diminished proportion of cases which had been frequently tapped; 6, the complete abandonment of the use of carbolic acid, or any other (so-called) antiseptic system, in the performance of the operation, and in the subsequent treatment; and, 7, the establishment of hospital discipline and hygiene, on the best-known principles, for private as well as for public patients. The discussion upon this paper was a very interesting one.

SODIUM CHLORIDE SOLUTION AS A TEST FOR ALBUMEN.—Dr. Roberts, of Manchester, recommends a saturated solution of common salt, acidulated with five per cent. of dilute hydrochloric acid (*B.P.*), as a substitute for nitric acid in the ordinary Gmelin's test. The precipitation is not a true coagulation, and the addition of more urine or water, or even shaking up the fluids, would cause it to be redissolved. He claimed that the brine-test is fully as delicate as nitric acid, and it has the advantage of not being corrosive. It did not throw down the urates, as nitric acid sometimes did, nor did it deepen the tint of high-colored urine, or cause the disengagement of gas. In all these respects the brine-test presented a distinct superiority over nitric acid. The acidulated brine precipitated peptones, so that occasionally it produced a cloudiness in urines which yielded no reaction with nitric acid. Dilute sulphuric, dilute nitric, or dilute phosphoric acid could be used to acidulate the brine instead of hydrochloric acid, and the test so prepared is equal in sensitiveness with that prepared with hydrochloric acid.—*British Medical Journal*, October 28.

AGREEABLE ANTISEPTIC AGENTS.—The glycono-borate of calcium and glycono-borate of sodium, according to Dr. Le Bon, in a communication to the Academy of Sciences (Paris letter to the *Lancet*), possess powerful antiseptic qualities, and may well be substituted for carbolic acid. More soluble in water, perfectly inodorous and unirritating, while at the same time powerfully disinfectant, they not only promise to be of value in surgery, but also have been employed successfully as preservatives for alimentary substances.

THE PROXIMATE CAUSE OF URÆMIC POISONING.—In all the cases of uræmia, according to Hlawka and Thomayer (*Berl. Med. Woch.*, No. 39), in which the kidneys were examined, they showed a more or less considerable, usually recent, small-celled infiltration which was not apparent in other cases of renal disease where symptoms of uræmia were absent. The infiltration of small cells existed in the neighborhood of the Malpi-

ghian bodies, and more especially at that part where the afferent and efferent vessels pierced Bowman's capsule, as well as about the interlobular arteries and the vessels of the renal cortex generally. This cellular new formation compresses the vessels, and so hinders the proper secretion of urine. The authors therefore regard the presence of this inflammatory product as a very important factor in the etiology of uræmia appearing in the course of inflammatory affections of the kidneys.—*Lancet*.

MISCELLANY.

USE OF CONDOM IN GONORRHOEA.—Several years since, one of my patients, suffering with gonorrhœa, complained to me of the annoyance caused by the discharge. The idea of using a condom immediately suggested itself to me, and I advised its use. At his next visit he expressed himself as being very much pleased with the treatment. Since that time I have frequently prescribed the same thing for other patients, much to their satisfaction. My plan is to cover the glans with a thin layer of disinfectant cotton, and then draw the condom over it. By this means undue pressure is avoided, perfect cleanliness obtained, and the movements of the limbs are not interfered with, as would be the case with a cumbersome bandage.—Dr. C. H. CHALKLEY, in *Southern Clinic*.

TRAUMATIC TETANUS AND DEATH FROM VACCINATION.—Dr. Bates, of Columbia, reported a case of tetanus from vaccination at the meeting of the South Carolina Medical Association (*Medical News*). Ben Jones, a mulatto, was vaccinated February 9, on the arm, with carefully-selected humanized virus. He was again seen March 8, when he had ordinary symptoms of tetanus. Was examined next day by Drs. Talley and Howe. A most careful inquiry into the history of the case, and a searching examination of the body, revealed nothing to cause it except a small, healthy-looking, painless ulcer at the spot where vaccination had been performed a month before. The disease advanced, and caused death in fifteen days, in spite of careful treatment.—*Buffalo Medical and Surgical Journal*.

DERIVATION OF "CESS-POOL."—Cess-pool, a pool for drains to drain into. Also spelt *sess-pool*. *Sus-pool* occurs in Forster on Atmospheric Phenomena. The spelling *sus-pool* gives us a probable source of the word. *Suss* in prov. Eng. means hog-wash (Halliwell), and = prov. E. *sozz*, a mixed mess of food, a collection of scraps, anything muddy or dirty, a dirty mess (Halliwell). Also a puddle, anything foul or muddy (Brockett).

This is of Celtic origin; cf. Gael. *sos*, any unseemly mixture of food, a coarse mess. The word *pool* is also Celtic. Hence *cess-pool* or *sus-pool* is probably a corruption of *soos-pool*, —i.e., a pool into which all foul messes flow.

I suggest, further, that *soss* is connected with Gael. *sugh*, juice, sap, moisture, also spelt *sogh*; W. *sug* (Lat. *succus*), moisture, whence W. *soch*, a drain, and prov. Eng. *soggy*, wet, swampy, *socky*, moist, prov. E. *sock*, the drainage of a farm-yard, *sock-pit*, the receptacle for such drainage. These words are obviously connected with E. *suck* and E. *soak*. Hence, briefly, a *cess-pool* is practically a *soak-pool*.—*Skeat's Etymological Dictionary*.

SACCHARATE OF COFFEE.—Carlo Paresi, in an Italian journal, describes a new method of concentrating and administering the valuable and useful constituents of coffee, as follows:

Roasted coffee (best), 1 part;
Refined sugar, 2 parts;
Warm water, q. s.

The coffee is exhausted in a convenient displacement apparatus of all its soluble constituents, by means of the warm water; the clear brown percolate is mixed with the sugar, and evaporated at a temperature not exceeding 50° C. (122° F.) in a suitable apparatus to dryness. Finally, it is reduced to powder, and kept in well-closed vessels.—*Druggists' Circular*.

A NEW LITANY.—District visitor: "Your boy looks very bad, Mrs. Jones: what's the matter?" Mrs. Jones: "Yes, ma'am, he be very bad; and, what's more, the doctor has made him worse. I'm sure we poor people ought to pray with all our heart, 'From all false doctorin', good Lord, deliver us.' I never saw its meanin' afore."—*Medical Times and Gazette*.

OLEUM MENTHÆ IN ZOSTER AND NEURALGIA.—The pain of herpes zoster is greatly relieved by painting the affected surface with oil of peppermint, as recommended by Dr. John Meredith (*Birm. Med. Review*). The value of the same remedy as a topical application in neuralgia is not as well known as it deserves to be.

THE ELECTRIC LIGHT IN A DISSECTING-ROOM.—The electric light is about to be introduced into the dissecting-rooms of the Ledwich School of Medicine, the largest in Dublin.

THE *Pharmacopœia Germanica* has at last been completed, and by the 1st of January will be generally distributed throughout Germany, replacing the edition of 1872.

A WRITER in the *North Carolina Medical Journal* commends cinnamon in menorrhagia. Though not much used, we know that it is an excellent remedy.

THE serious illness of Prof. Virchow has been announced, but later reports are rather more reassuring.

A NEW SOURCE FOR ALCOHOL.—According to the *Chemist and Druggist* (*Chem. Zeitung*, August 27), alcohol can be easily obtained from chicory, as the root contains, on an average, twenty-four per cent. of substances readily convertible into sugar. The spirit obtained by fermentation and distillation is characterized by a pleasant taste and great purity.

THE PHILADELPHIA COLLEGE OF PHYSICIANS has decided, after the beginning of the year, to open its library from seven to ten o'clock in the evening, the hours during the day remaining as before.

NOTES AND QUERIES.

102 EAST FIFTY-SEVENTH ST., NEW YORK,
November 27, 1882.

DEAR DOCTOR,—Your reporter makes me responsible for a very ridiculous statement on page 133 of your last issue. Dr. Forrest, in his paper, ignored other causes of delayed labor than a rigid cervix, and I said that one cause, not often recognized in cases where "rigid os" was commonly blamed for the delay, is slight narrowness of the mother's pelvis. In other words, the fourth and fifth lines of paragraph should read, "sometimes the cause of delayed labor, instead of rigidity of the os, as was," etc.

Yours truly,
O. A. CASTLE.

OFFICIAL LIST

OF CHANGES OF STATIONS AND DUTIES OF OFFICERS OF THE MEDICAL DEPARTMENT U.S. ARMY FROM DECEMBER 2 TO DECEMBER 9, 1882.

MOORE, JOHN, MAJOR AND SURGEON.—The extension of leave of absence granted November 3, 1882, is further extended one month. Paragraph 4, S. O. 283, A. G. O., December 6, 1882.

CALDWELL, DANIEL G., CAPTAIN AND ASSISTANT-SURGEON.—Leave of absence granted in special orders No. 105, October 3, 1882, Department of the Platte, extended three months. S. O. 279, A. G. O., December 1, 1882.

CRAMPTON, LOUIS W., CAPTAIN AND ASSISTANT-SURGEON.—Granted four months' leave of absence. S. O. 280, A. G. O., December 2, 1882.

GORGAS, W. C., ASSISTANT-SURGEON.—Relieved from duty at Fort Brown, Texas, and will accompany the Nineteenth Infantry to Forts Clark and Duncan, Texas. Their future stations will be announced. S. O. 130, Department of Texas, November 27, 1882.

MADDOX, T. F. C., ASSISTANT-SURGEON.—Relieved from duty at Fort Brown, Texas, and will accompany the Nineteenth Infantry to Forts Clark and Duncan, Texas. Their future stations will be announced. S. O. 130, Department of Texas, November 27, 1882.

POWELL, J. L., ASSISTANT-SURGEON.—Relieved from temporary duty as attending surgeon at headquarters Department of Texas, and to proceed to Fort Davis, Texas, and report to the commanding officer for duty. S. O. 129, Department of Texas, November 23, 1882.

REED, WALTER, CAPTAIN AND ASSISTANT-SURGEON.—Assigned to duty as attending surgeon, headquarters Department of the Platte. Paragraph 2, S. O. 127, Department of the Platte, December 4, 1882.

TAYLOR, MARCUS E., CAPTAIN AND ASSISTANT-SURGEON.—The leave of absence granted August 14, 1882, is extended two months. Paragraph 6, S. O. 283, A. G. O., December 6, 1882.

GRAY, WILLIAM W., FIRST-LIEUTENANT AND ASSISTANT-SURGEON.—The leave of absence granted on surgeon's certificate of disability, October 31, 1882, Department of the South, is extended five months on surgeon's certificate of disability. Paragraph 3, S. O. 278, A. G. O., November 29, 1882.